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UNITED STATES DEPARTMENT OF AGRICULTURE  
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TOBACCO PRODUCTION AND CONSUMPTION IN THE NETHERLANDS INDIES

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N O T E

All units of weights and measures used in this report are, unless otherwise specified in places where used, those recognized as standard in the United States. Unless otherwise stated, quotations of prices and values are in United States dollars and cents. Conversions of prices and values that apply to particular periods have been made at rates effective during those periods.

The following tabulation shows exchange rates for 1913 and 1920 to 1939, inclusive:

United States		United States		United States	
Year	cents per guilder	Year	cents per guilder	Year	cents per guilder
1913.....	40.211	1927.....	40.180	1934.....	65.733
1920.....	33.250	1928.....	40.220	1935.....	67.568
1922.....	37.313	1929.....	40.019	1936.....	59.791
1923.....	37.453	1930.....	40.140	1937.....	55.172
1924.....	37.488	1931.....	39.960	1938.....	55.010
1925.....	40.000	1932.....	40.019	1939 a/...	53.446
1926.....	40.222	1933.....	49.596		

1913 to 1937, compiled from highest and lowest quotations during year as published in "Netherlands Indian Report 1938 - Part II." 1938 and 1939, average of daily quotations on guilders in New York as published by Board of Governors of the Federal Reserve System.

a/ January to August.

## TOBACCO PRODUCTION AND CONSUMPTION IN THE NETHERLANDS INDIES

The Netherlands Indies has for many years ranked among the leading tobacco-producing and -exporting countries of the world. The average annual production of the islands has for most recent years ranged between 240 and 300 million pounds, which is in excess of the reported production in countries other than the United States, British India, China, and the Union of Soviet Socialist Republics. For the past 30 years or more, annual exports from the islands have usually ranged between 100 and 200 million pounds, which makes them second in importance to the United States as a tobacco-exporting country. Most of the export is to the Netherlands where part of it is sold in competition with American, particularly air-cured and cigar types. Fairly large quantities of Sumatra cigar-wrapper leaf are purchased at the Netherland markets by American cigar makers and leaf dealers. Java cigar-filler and pipe-tobacco types are sold almost exclusively to European buyers.

The commercial production of American-type flue-cured leaf was started in the islands in 1928 and during recent years has expanded quite rapidly. As yet the entire output is used in cigarettes for domestic consumption, but agencies interested in its expansion, particularly the Netherlands Indies Government, are encouraging production with a view to enabling the export of substantial quantities. Small shipments of this leaf to the Netherlands have created an interest in it as a substitute for American flue-cured. It is hoped by the Netherlands Indies authorities that its export will in time offset the decline that has occurred during recent years in the islands' export of cigar and pipe-tobacco types.

Table 1.- Approximate production, export, import, and quantity available for domestic consumption of tobacco (fermented weight) in the Netherlands Indies, crops of 1933 to 1937

Year a/	Domestic production				Exports,:		Net	Imports,:	Total
	Total	Sumatra	Borneo,	:	tobacco	supply	leaf and	for	
	reported:	native	Celebes,	Total	:	and	of	products	domestic
	b/	types	and	:				domestic:	d/
	c/	others	c/					tobacco	consump-
	1,000	1,000	1,000	:	1,000	1,000	1,000	:	1,000
	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>	:	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>	:	<u>pounds</u>
1933.....	215,264	10,000	17,000	:	242,264	108,560	133,704	:	12,722
1934.....	265,181	10,000	17,000	:	292,181	120,044	172,137	:	9,252
1935.....	240,648	10,000	17,000	:	267,648	117,902	149,746	:	8,207
1936.....	225,720	10,000	17,000	:	252,720	119,018	133,702	:	13,413
1937.....	250,830	10,000	17,000	:	277,830	119,348	158,482	:	12,386
Average...	239,529	10,000	17,000	:	266,529	116,974	149,555	:	11,196
									160,751

Compiled from data in accompanying tables 3 and 7 and approximations for production data not included in table 3.

a/ Year of harvest; exports, net supply of domestic tobacco, imports, and total available for domestic consumption are for following year.

b/ Includes Sumatra estate tobacco and estate and native production in Java and Madura; see table 3.

c/ Approximated.

d/ Officially reported exports and imports increased 10 percent to make them approximately comparable with fermented weight.

Tobacco consumption in the islands during recent years has been about 160 million pounds, fermented weight, annually. Most of the tobacco used in products consumed is from domestic production. Substantial quantities of American flue-cured have been imported either as leaf or in tobacco products; however, increases in recent years in the utilization of both domestic flue-cured and Java types suitable for domestic cigarettes have caused such imports to decline.

It is evident that Netherlands Indies tobacco competes with American leaf both abroad and in our domestic market. At the same time United States flue-cured leaf is sold in the islands in competition with their domestic production. It is important, therefore, for American tobacco growers to be informed regarding all phases of the tobacco industry of the Netherlands Indies. This report is intended to furnish such information as is available and to give some indication of probable future developments in the tobacco industry of the islands.

#### HISTORY

There is no record of tobacco having been grown in the Netherlands Indies prior to its introduction by Europeans. It is not found in a wild state, and the plant has always been known by its foreign name. Its cultivation was probably introduced by the Portuguese some time near the end of the sixteenth century, and possibly later reintroduced by the Dutch. According to a Javanese chronicle it was first introduced in 1601. <sup>1/</sup>

There are no authentic records indicating the rapidity with which production and consumption expanded during the first two centuries after its introduction; however, expansion is believed to have been slow. Even in recent years the per-capita consumption of the population has been relatively low and production probably did not become significant until an export demand developed. Exports probably began during the 18th century, but it was not until the 19th century that they became large enough to indicate a significant production. In 1847, sales of Netherlands Indies tobacco in the Netherlands, which has been the principal export market, totaled only about 5,600,000 pounds.

Commercial production of tobacco of the kinds for which the Netherlands Indies is now noted in world trade, did not begin until more recent times. The growing of Sumatra cigar-wrapper leaf had its beginnings in 1863. It was started by a single planter, J. Nienhuijs. He secured a concession for the use of land on which to grow tobacco from the Sultan of Deli, made trial plantings,

<sup>1/</sup> Laufer, Berthold; "Tobacco and its use in Asia." Field Museum of Natural History, Chicago, Illinois, 1924. The same publication also states that, "G. E. Rumpf, a botanist, who explored the flora of the Malay Archipelago in the latter part of the seventeenth century, writes that old Javanese, according to what they had learned from their parents, told him that the tobacco plant had been well known in Java prior to the arrival of the Portuguese, but solely for medicinal purposes, not for smoking; they stated unanimously that they acquired the custom of smoking from Europeans. Such oral traditions, as a rule, are devoid of historical value. The same Rumpf also learned in Java from an Amoy Chinese that the tobacco plant had from ancient times existed in China, but was rarely cultivated; and this plainly contradicts the Chinese records concerning the recent introduction."

and in 1865 organized a plantation company for extensive production. Following this start other companies were organized, and production has always been in the hands of a few large concerns with extensive holdings.

Production of Vorstenlanden Java cigar tobacco began a few years prior to production in Sumatra. It has also always been in the hands of a few large plantation companies or large planters. Production of Besoeki Java leaf, which has been grown largely by natives but much of it cured and handled by a few companies, was fairly extensive before the production of Vorstenlanden and Sumatra wrapper-leaf was started. Commercial production in other districts, which are of less importance than those mentioned, apparently also began some time between 1850 and 1875. Following their introduction the trend in production of Sumatra and Java export types was upward, reaching a peak in 1914.

Since early days a large portion of Netherlands Indies tobacco has been exported. Practically all of the estate tobacco is grown for export, and a large part of the native crop is shipped abroad. For the years preceding and immediately following the World War, over half of total production was shipped abroad. During recent years about 40 percent of the production has been exported.

Domestic consumption of tobacco has been largely limited to native Kerf (cut tobacco) used in hand-made cigarettes, "strootjes," <sup>1/</sup> cigars, and for chewing. The consumption of cigars and machine-made cigarettes has, until recent years, been insignificant. Even in 1938 they accounted for only about 17 percent of total poundage of tobacco consumed.

### TOBACCO PRODUCTION

#### Quantity Produced and Trend

Total production of tobacco in the Netherlands Indies during the 5 years 1933 to 1937 is estimated to have averaged about 267 million pounds annually. Official records are limited to the acreage and production on large estates, and the acreage of nonestate or native tobacco in Java and Madura. These estimates, with an approximate average yield per acre for Java and Madura native tobacco indicate that their total production since 1920 has ranged between 172 million and 311 million pounds annually. The trend was upward from 1920 to 1928 but production has declined since 1928. During the 5 years 1933 to 1937 production in these districts, from an average acreage of 454,000 acres, was only about 240 million pounds annually.

Acreage and production, not officially reported, include native tobacco in all of the islands other than Java and Madura. Production of native tobacco in Sumatra in recent years is approximated by Netherlands Indies officials at 10 million pounds, and that in other areas for which official figures are not available, at about 17 million pounds.

<sup>1/</sup> Strootjes are made from Kerf rolled in corn shucks or tree leaves (see page 47).

Table 2.- Acreage of specified kinds of tobacco in Sumatra, Java, and Madura,  
1920 to 1937

Year	Sumatra			Java and Madura			Native tobacco a/			Total of areas reporting		
	Java estate tobacco			Java and Madura			Native tobacco a/			Total of areas reporting		
	Vorsten- tobacco	Besoeki	Other	West	Middle	East	Java b/	Total	Acres	Acres	Acres	Acres
1920	31,342	19,113	56,986	1,829	10,210	121,534	109,974	241,713	350,988	350,988	350,988	350,988
1921	33,924	18,058	52,336	27	7,517	111,437	131,185	250,139	354,484	354,484	354,484	354,484
1922	46,919	18,406	49,039	1,492	13,882	120,963	130,600	265,445	331,301	331,301	331,301	331,301
1923	45,138	15,308	50,055	341	15,090	124,131	164,134	303,355	414,197	414,197	414,197	414,197
1924	46,615	15,439	51,960	1,421	15,614	170,044	303,538	459,196	604,631	604,631	604,631	604,631
1925	46,178	15,945	48,120	1,236	13,086	136,669	193,620	343,375	454,854	454,854	454,854	454,854
1926	47,166	15,995	50,399	1,263	11,866	128,467	206,499	346,832	461,655	461,655	461,655	461,655
1927	48,694	14,927	51,313	1,122	20,072	162,226	229,946	412,244	528,300	528,300	528,300	528,300
1928	51,399	16,837	58,553	1,515	16,711	170,766	249,247	436,724	565,028	565,028	565,028	565,028
1929	51,800	16,573	48,397	3,571	15,145	163,341	183,469	361,955	482,296	482,296	482,296	482,296
1930	49,934	16,879	59,796	3,610	14,623	143,985	211,246	369,854	500,073	500,073	500,073	500,073
1931	47,992	17,505	64,513	4,218	15,819	153,276	255,472	424,567	553,800	553,800	553,800	553,800
1932	42,131	16,781	46,712	4,290	16,891	149,683	181,359	349,933	459,847	459,847	459,847	459,847
1933	28,587	15,305	43,407	2,955	17,020	136,295	167,319	320,634	415,833	415,833	415,833	415,833
1934	23,251	16,405	47,572	462	21,366	151,556	240,740	414,162	506,852	506,852	506,852	506,852
1935	28,461	14,643	41,822	2,073	13,903	153,768	191,278	363,969	450,968	450,968	450,968	450,968
1936	30,677	14,268	47,463	2,515	20,423	129,154	174,837	324,464	419,407	419,407	419,407	419,407
1937	32,155	14,463	55,121	2,982	18,132	145,688	207,277	371,097	475,818	475,818	475,818	475,818

Compiled from data furnished by Agricultural Statistics Section of Central Bureau of Statistics of the Netherlands Indies.

a/ Includes flue-cured acreage, which is shown separately in table 6.

b/ Includes Madura.

Table 3.—Production of specified kinds of tobacco (fermented weight) in Sumatra, Java, and Madura,  
1920 to 1937 a/

Year	Java estate tobacco				Native tobacco				Total of areas report- ing
	Sumatra estate leaf	Vorsten- landen leaf	Besoeki Leaf	Other Hang- krossok	Leaf	Leaf b/	Krossok & Kampong- krossok by/others c/	Total d/	
1920	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000
1921	21,892 29,200	13,849 19,165	5,780 13,898	8,726 11,345	14,123 2:	247 4:	1,995 1,973:	18,353 7,454:	87,458 102,135:
1922	35,412:f	21,451	17,747	13,880	399:	203:	1,283:	7,670:	109,435:
1923	37,295:	19,442:	11,032:	16,223:	44:	57:	1,605:	13,153:	120,538:
1924	40,044:	20,399:	10,586:	18,477:	441:	791:	2,064:	21,755:	194,362:
1925	39,734:	21,731:	12,033:	25,919:	414:	635:	2,956:	21,539:	128,650:
1926	44,202:	24,449:	12,870:	23,902:	580:	937:	2,846:	20,415:	131,426:
1927	41,270:	22,945:	12,831:	20,609:	99:	33:	3,565:	23,607:	156,689:
1928	46,790:	26,916:	21,810:	19,200:	569:	955:	2,478:	25,447:	166,854:
1929	42,694:	26,393:	17,549:	20,525:	1,206:	73:	2,538:	17,328:	141,566:
1930	42,280:	25,108:	21,986:	17,868:	1,157:	163:	2,169:	22,805:	139,921:
1931	40,011:	24,649:	23,389:	21,248:	1,433:	397:	2,112:	27,802:	159,443:
1932	30,558:	24,401:	18,371:	14,775:	1,338:	456:	1,377:	8,181:	146,512:
1933	28,812:	21,169:	15,609:	5,626:	977:	63:g/	1,508:h/	11,609:	129,886:
1934	28,358:	23,814:	15,307:	12,564:	179:	243:	2,405:	14,619:	167,692:
1935	28,490:	22,136:	4,616:	21,784:	950:	342:	701:	14,277:	147,352:
1936	30,229:	22,004:	8,448:	19,202:	886:	240:	1,127:	18,309:	125,275:
1937	31,202:	21,063:	8,653:	22,712:	1,208:	483:	1,373:	17,963:	146,173:

Compiled from data furnished by Agricultural Statistics Section of Central Bureau of Statistics of the Netherlands Indies.

a/ The designation leaf refers to the better qualities of tobacco that are cured and fermented on estates. Hangkrossok is the lower-quality estate tobacco. Kampongkrossok is the better qualities of tobacco grown by natives, usually from seed or plants furnished by estate companies; it is cured by the natives but fermented by the estate companies or by dealers. Krossok represents all tobacco other than Kampongkrossok that is grown and cured by natives but fermented by estate companies or dealers. Kerf is native tobacco that is shredded in the process of curing. b/ Subject to some error as a part of the smaller estate companies and dealers do not report their purchases from natives. c/ Includes flue-cured, and small amounts of leaf and Krossoks not included under the two preceding headings. Calculated from approximated total native production and reported native leaf, Krossok and Kampongkrossok. d/ Production not officially reported; approximated from acreage given in table 1, and an average yield of 446 pounds per acre. e/ Includes small amounts of Krossok as follows: 1922 - 82,000 pounds; 1925 - 141,000; 1927 - 725,000; 1931 - 95,000; 1932 - 119,000 pounds. f/ Includes 22,000 pounds of Krossok. g/ Includes 42,000 pounds of Kerf. h/ Includes 66,000 pounds cut tobacco.

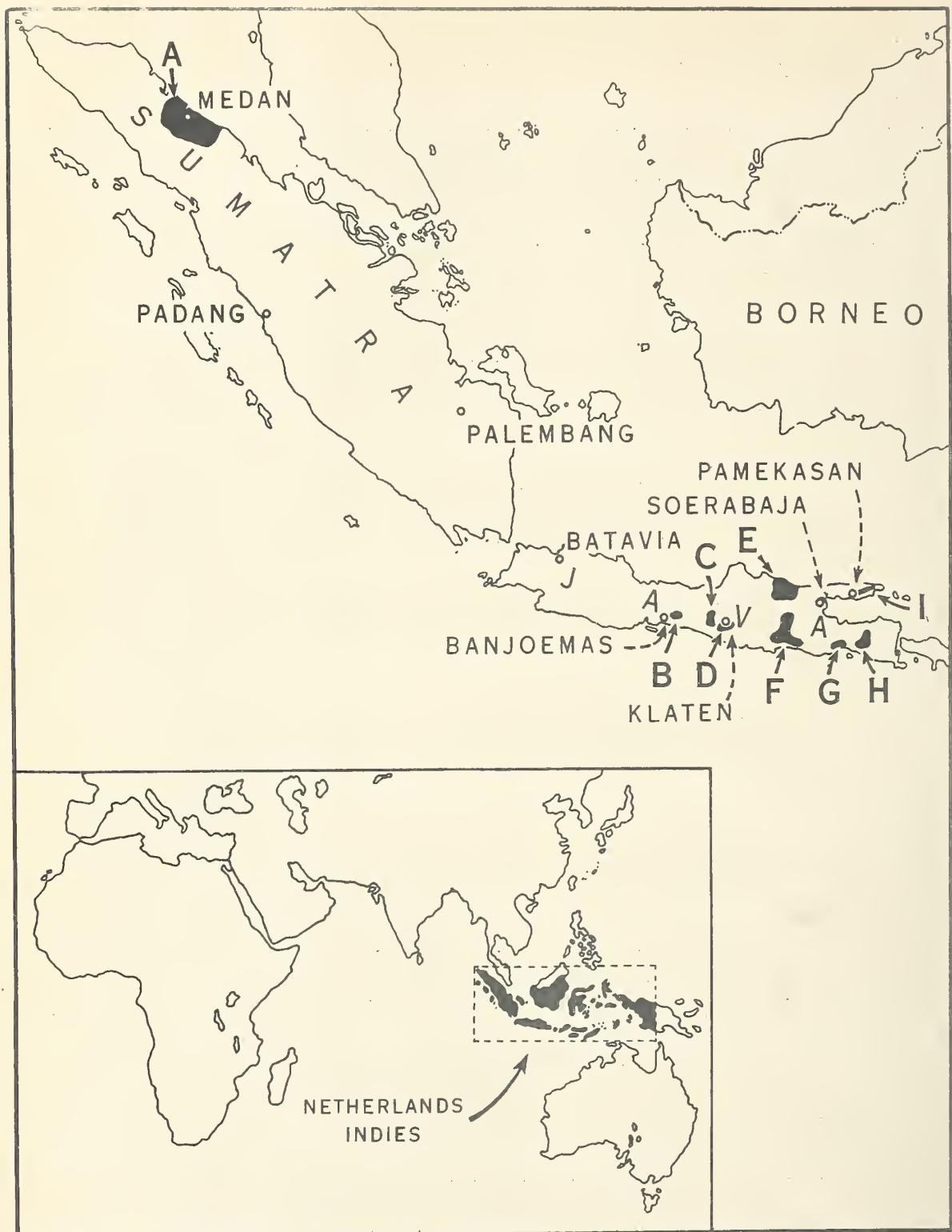


Figure 1. - Leading tobacco districts of the Netherlands Indies: A, Sumatra wrapper; B, Benjoemas; C, Kedoe; D, Vorstenlanden; E, Rembang; F, Kediri; G, Loemadjang; H, Besoeki; I, Madura.

### Types Produced

Most Netherlands Indies tobacco is of dark or relatively dark types. Under American standards they would be classed either as cigar-leaf or between the light and dark air-cured types. The tendency to some homogeneity in types can be largely attributed to the climate and soil, which are to a considerable extent determined by the location of the islands.

### Location, Area, Population, Topography, and Soils

The Netherlands Indies comprise almost all of the Indian Archipelago. They are located along the equator between 95 degrees and 141 degrees east longitude, a distance of about 3,180 miles, or approximately 300 miles less than the distance from New York to San Francisco. The most northern land area extends to near 6 degrees north latitude, and the most southern area to 11 degrees south latitude. The distance from north to south across the islands is about 1,175 miles, or something near the distance between the northern and southern borders of the United States.

The total area of the islands is about 735,000 square miles, which is approximately equal the land area of the States east of the Mississippi River, excepting Georgia and Florida. It is made up of hundreds of islands varying in size from a few square rods to about 200,000 square miles. The Netherland portion of Borneo, New Guinea, and the island of Sumatra are each larger than the combined area of Illinois, Indiana, Ohio, and Pennsylvania. The islands of Java and Madura, which are among the most densely populated areas in the world (about 820 people per square mile), have a combined area slightly larger than New York State.

The following tabulation shows the areas and population of different parts of the Netherlands Indies:

	<u>Area</u> <u>Square miles</u>	<u>Population</u> <u>1930 census</u>
Java and Madura.....	51,000	41,718,000
Sumatra.....	182,900	8,255,000
Borneo.....	208,300	2,169,000
Celebes and adjacent islands.....	38,800	3,093,000
Moluccas and New Guinea.....	191,700	893,000
Other islands.....	62,600	4,599,000
Total.....	735,300	60,727,000

Most of the islands in the archipelago are very mountainous. The mountains in most cases rise abruptly from coastal plains, and there are several peaks with altitudes of over 10,000 feet. Many are volcanoes, of which there are about 400. The coastal plain areas and valleys between mountain ranges are relatively large in Sumatra, Borneo, and Netherland Guinea, but are smaller in Java and other islands. Soils of the islands have been derived from volcanic ash, the weathering of rock formations and the decomposition of dense tropical vegetation. The volcanic soils are rich in minerals, and, when they contain a

high percentage of humus, they are very fertile. The soils derived from older rock formations are of lower fertility. Volcanic soils are most extensive in Java. As a consequence, agriculture including tobacco growing has become more extensively developed in Java than in the other islands.

### Climate

All of the land area in the Netherlands Indies is within 760 miles of the equator, and, as a consequence, temperatures throughout the year are relatively uniform. At sea level the fluctuations in monthly average temperatures through the year in practically all parts of the archipelago only range between 77° and 82° F. The yearly average at nearly all sea-level points is about 79° F. Cool areas are limited to mountain districts. For each 300 feet of rise in elevation there is a decline in average yearly temperature of approximately 1° F. Frost areas are limited to the higher mountain districts, but for most of such districts where agriculture is important frost only occurs occasionally during the coolest dry months. Daily fluctuations in temperature are small throughout the year. Average monthly maximum temperatures at sea level points throughout the islands range between 84° and 90° F. and average minimums between 72° and 77° F.

Sunshine is plentiful. The difference between the longest and shortest days in the year is only about 48 minutes. Rains are frequent, but there is seldom a day in which the sun does not shine. In some districts of heaviest rainfall the sunshine for some months is less than 30 percent of maximum (maximum being the number of hours during the month between times of sunrise and sunset). In most districts, however, the percentage of sunshine is much higher and the yearly average for the archipelago as a whole is about 65 percent.

The atmosphere is relatively humid. Monthly averages of relative humidity over most of the territory vary from around 75 percent in dry months to near 90 percent in wet months. The yearly average relative humidity for the entire area is about 81 percent, average maximum about 94, and average minimum about 59 percent.

Yearly total and seasonal rainfall vary widely, but in most areas rainfall is not too heavy or too light for crops. The average annual varies from 21.5 inches at Paloe, an inland town near the west coast of the Celebes, to 266.4 inches at Tombo, an inland town of Central Java. In general, the period of greatest rainfall is from November through January and the period of least rainfall from May through August; however, in certain districts on the west coast of Sumatra, the south coast of Java, and parts of the Celebes, rainfall is low in December and January, as well as during the summer months, and highest in April and October. There are also some districts and islands for which the monthly average rainfall is fairly uniform throughout the year.

Districts of uniform seasonal and total annual rainfall are small. In mapping such districts, the Netherlands Indies' Meteorological Bureau established 68 districts in Java and Madura, and 84 in the other islands. This lack of uniformity as regards rainfall results from the influence of mountains and prevailing winds. Rainfall over most of the archipelago, and particularly the portion south of the equator, is influenced by monsoons, which blow in opposite directions at different times of the year. The southeast monsoon from over the continent of Australia during the months of April through October results in a period of relatively low rainfall, whereas the west and northwest monsoons from over the

Indian Ocean during the months of November through March result in a period of heavy rainfall. Wind currents over the portion of the archipelago near the equator and north of the equator are not so well defined. In general, however, winds north of the equator blow from northeast to southwest during the months of November through March, and from southwest to northeast during the period April through October. This results in rainfall being heavier during the summer months than is the case in areas south of the equator.

In many cases the mountains shut off part, and in some cases nearly all of the rains carried by the different monsoons. This results in districts to the leeward of mountains having a materially different seasonal and total annual rainfall than those immediately to the windward.

Table 4.- Average monthly and annual rainfall in leading tobacco-producing districts of Sumatra, Java, and Madura <sup>a/</sup>

District	Number		Monthly averages					
	of	stations	Jan.	Feb.	Mar.	Apr.	May	June
	Number	Inches	Inches	Inches	Inches	Inches	Inches	Inches
Sumatra -	:	:	:	:	:	:	:	:
East Coast.....	10	7.8	5.3	6.2	7.0	9.4	6.9	
West Coast.....	5	12.1	8.9	11.2	12.4	9.6	7.0	
Java -	:	:	:	:	:	:	:	
Banjoemas.....	5	18.2	16.5	19.6	13.8	9.6	6.2	
Kedoe.....	5	20.2	17.6	19.1	14.9	10.7	6.5	
Vorstenlanden..	10	12.2	13.0	11.3	7.1	4.8	3.6	
Rembang.....	7	13.0	12.5	11.9	7.2	5.4	2.6	
Kediri.....	5	13.4	13.3	12.3	8.8	6.3	3.3	
Loemadjang.....	5	10.1	9.9	9.6	7.0	5.6	4.6	
Besoeiki.....	10	16.0	13.3	12.4	7.5	5.7	3.1	
Madura -	:	:	:	:	:	:	:	
Eastern.....	5	12.1	10.6	10.1	7.2	4.6	3.1	
	:	:	:	:	:	:	:	
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly	
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	average
Sumatra -	6.4	9.1	10.6	13.4	11.2	10.2	103.5	
East Coast.....	7.8	10.8	12.6	14.7	17.1	14.4	138.6	
Java -	:	:	:	:	:	:	:	
Banjoemas.....	3.4	2.6	4.0	14.1	21.5	21.6	151.1	
Kedoe.....	4.1	3.6	4.9	11.8	18.6	22.3	154.3	
Vorstenlanden..	1.2	1.2	1.1	3.9	7.7	11.4	78.5	
Rembang.....	1.6	1.3	1.7	4.2	8.2	12.1	81.7	
Kediri.....	1.6	1.1	1.4	3.8	3.2	12.3	85.8	
Loemadjang.....	3.1	3.0	2.5	6.6	8.9	9.5	80.4	
Besoeiki.....	1.5	1.4	1.7	4.7	9.3	13.7	90.3	
Madura -	:	:	:	:	:	:	:	
Eastern.....	1.6	0.4	0.5	1.7	5.6	9.7	67.2	

Compiled from data published in "Rainfall in the Netherlands Indies" by Prof. Dr. J. Boerema, Batavia, Java.

a/ averages at selected stations scattered throughout the districts.

Tobacco Districts, Their Soil, Climate, Tobacco Grown, and Cultural and Curing Practices

There are nine well-defined tobacco-producing districts in the Netherland Indies which grow recognized export types of tobacco. They include the Deli district on the east coast of Sumatra, seven districts in central and east Java, namely, Banjoemas, Kedoe, Vorstenlanden, Rembang, Kediri, Loemadjang, and Besoeki; and a district on the island of Madura.

The production of native tobacco, largely kerf, is carried on throughout the islands. The most important districts are the west coast of Sumatra near the port of Padang, the southeast section of Sumatra near Palembang, central and eastern Java, Bali, Lombok, and Celebes. Production in Borneo, Netherlands Guinea, and the other islands is limited; in most cases it does not equal local requirements.

Sumatra East Coast (Deli Cigar Wrapper District)

The Sumatra cigar wrapper district is confined to a limited area on the northeast coast of the island of Sumatra and is all within a radius of about 25 miles of the town of Medan, the capital of Sumatra. The development of the district has resulted from the special properties of its soil and climate, which make for the production of a high grade, thin, elastic leaf. The first tobacco shipped to the Netherlands from the district in 1865, a lot of 50 bales, was immediately recognized for its excellent quality. It was sold originally for 0.48 guilder per half-kilo (24 cents per pound at the 1939 exchange), but was reported to have changed hands several times at increased prices. In the following year a shipment of 189 bales sold for an original price of 1.49 guilders per half-kilo (75 cents per pound at the 1939 exchange). With this beginning, production expanded rapidly and for many years there has been a continuous demand for the leaf in practically all cigar-producing countries of the world. It has always been sold almost exclusively in the Netherlands. Only the very low grades that cannot be used except for wrappers on very cheap cigars are sold locally or exported to other ports. Cigar makers in the Netherlands Indies who wish to buy the better wrapper qualities of Sumatra leaf must purchase them in Amsterdam and ship them back to the islands.

By 1872 the annual production of Sumatra wrapper tobacco had increased to over 1,000,000 pounds, and by 1880 to over 10,000,000 pounds. In 1890 the production was about 43,000,000 pounds, which was a record crop and was not exceeded until 1899, when about 48,000,000 pounds were produced. Between 1900 and 1918, production ranged between 40,000,000 and 52,000,000 pounds annually. It declined sharply in the post-war years 1919 to 1921, and averaged only about 28,000,000 pounds annually. The 1922 crop was materially larger than that of 1921, and from then until 1931 production averaged about 41,000,000 pounds annually. From 1932 to 1938, production ranged between 28,000,000 and 31,000,000 pounds annually.

Throughout the entire history of Sumatra wrapper leaf its quality has been maintained and it has always been considered among the best wrapper types in the world. The leaf is very thin and elastic, which results in a large number of wrappers per unit of weight. It is light greenish brown to brown in color and burns to a white ash.

There are probably few places in the world suited for producing leaf with characteristics and quality similar to Sumatra wrapper, and there are few places where greater care and scientific research is followed in tobacco growing. Production has always been in the hands of a few large, well-financed companies, which have employed highly trained production managers. In addition, the companies have maintained a research organization and experiment station, which serve the entire district. This organization is divided into departments that are continually studying the soil of the district, varieties of tobacco, tobacco diseases, insect control, and cultural and curing practices. Each department is headed by a highly trained technician, who works in connection with the estate managers in improving the quality of the leaf. The companies also maintain overhead associations, one in the Netherlands and one in Sumatra, which devote their entire time to economic investigations and give advice regarding production costs, labor supply, market outlet, and probable demand for various qualities of the leaf.

Types of Sumatra Wrapper Tobacco: Sumatra wrapper tobacco has not always been a distinct type or variety. The soil and climatic conditions under which it is grown have resulted in uniformity of the leaf as regards color and texture, which has enabled it to be classified commercially as a single type, but botanically it has until recently been a mixture of types that could be separated into several strains.

In 1908 investigations made by L. P. De Bussy showed that the tobacco is not a true breeding species but a mixture from which separate types can be segregated. He segregated a precocious strain, which flowers about 10 days earlier, has a lower number of leaves, and thinner stalks of less height than the average tobacco in the district. He was also able to extract a type or variety with coarse leaves and of slow growth and one having many leaves and reaching a height of nearly 17 feet. 1/

in 1903

Experiments begun in the United States with Sumatra wrapper leaf enabled the investigators to conclude that there were as many as eleven very distinct forms of the plants, sufficiently different to be designated as incipient varieties. 2/ These investigations, however, are somewhat discredited in the Netherlands Indies due to the fact that the seeds used were from plants grown in the United States, and not directly from Sumatra. It is believed possible that some cross fertilization might have taken place and some of the types segregated might have originated from crosses with American types.

In 1914 further investigations of types were made in Sumatra and it was found that there were at least six distinct types. Those previously segregated by De Bussy were found constant for most typical characteristics but not for all other factors. Trueness to type of succeeding generations from the other types segregated was not proven.

In the years preceding 1920 considerable attention was given to seed selection with a view to improving and further standardizing Sumatra wrapper leaf. By that year several of the estates were using only seed that would

1/ Honing, J. A., 1915, "Deli Tobacco a Mixture of Types," Druk Van J. H. De Bussy, Amsterdam.

2/ Shamel, A. D., 1906 "New Tobacco Varieties," 1906 United States Department of Agriculture Year Book, page 387.

produce a type as true as can be obtained by seed selection. By 1926 all of the estates were using selected seed, and by 1938 they were using seed from only four strains of the typical Sumatra type, each strain having only minor mutational differences.

Soils: Soils in the Sumatra wrapper-tobacco district apparently have greater influence in fixing the commercial characteristics and quality of the leaf than other factors, such as varieties, climate, and cultural and curing practices. The soils are all primarily of volcanic origin, rich in minerals and underlaid with older marine rocks or sediments, of which there are outcroppings at certain points. They vary in color from red to brown, and grey to black, and in texture from clay loams to sandy loams. They each have an acid reaction but some are only slightly acid, pH reaction number ranging from about 5.3 to 6.7. <sup>1/</sup> Eight distinct soils have been recognized. Five are strictly volcanic soils and have been petrographically designated:- liparitic-dacite, liparite, dacitic mud-streams, dacitic and andesitic mud-streams. Two of the remaining three are alluvial soils, one being derived from liparitic-tuff and one from dacitic-andesitic tuff. The remaining type, of which there are only limited areas in the tobacco district, is soil derived from marine rocks and sediments.

The different soils vary substantially and there is a pronounced difference in the quality of tobacco grown on them. Certain of them are also more susceptible than others to tobacco plant diseases. This is particularly true as regards Granville wilt, known in Sumatra as slime disease, which does greater damage in the Sumatra-wrapper district than any other. The accompanying figure 2 shows the location of the different soils and also the boundary in 1937 of the area in which Sumatra wrapper leaf tobacco was grown.

It will be noted that soils derived from volcanic tuff are farthest from the coast. The district in which the soils are found is a low plateau extending into the foothills. The alluvial soils are near the coast and have been formed by streams flowing from the sections of volcanic soils. The soils within the district derived from marine rocks and sediments are not suitable for tobacco and are limited to outcroppings in the volcanic-tuff soils.

The following is a description of the different soil types, their susceptibility to Granville wilt, and average prices received at Amsterdam for the leaf grown on them from 1893 to 1930. The prices offer an indication of the quality of leaf obtained from the different soil types.

Type 1 - Liparitic-dacite is a red-clay loam with a pH of 5.7 to 5.8. Granville wilt on the soil is moderate to bad. It produces tobacco of average quality, which, during the period indicated above sold for an average price of 1.51 guilders per half-kilo (\$0.75 per pound). <sup>2/</sup>

<sup>1/</sup> The pH is a measurement of acidity and alkalinity of soils, which indicates the hydrogen ion concentration. A neutral soil has a pH of 7. Soils with a pH below 6 are decidedly acid, and those with a pH above 8 are decidedly alkaline. pH's from 6 to 7, and 7 to 8, indicate slightly acid or slightly alkaline soils. <sup>2/</sup> Converted to United States dollars at 55 cents per guilder, the rate prevailing during the years 1937 and 1938.

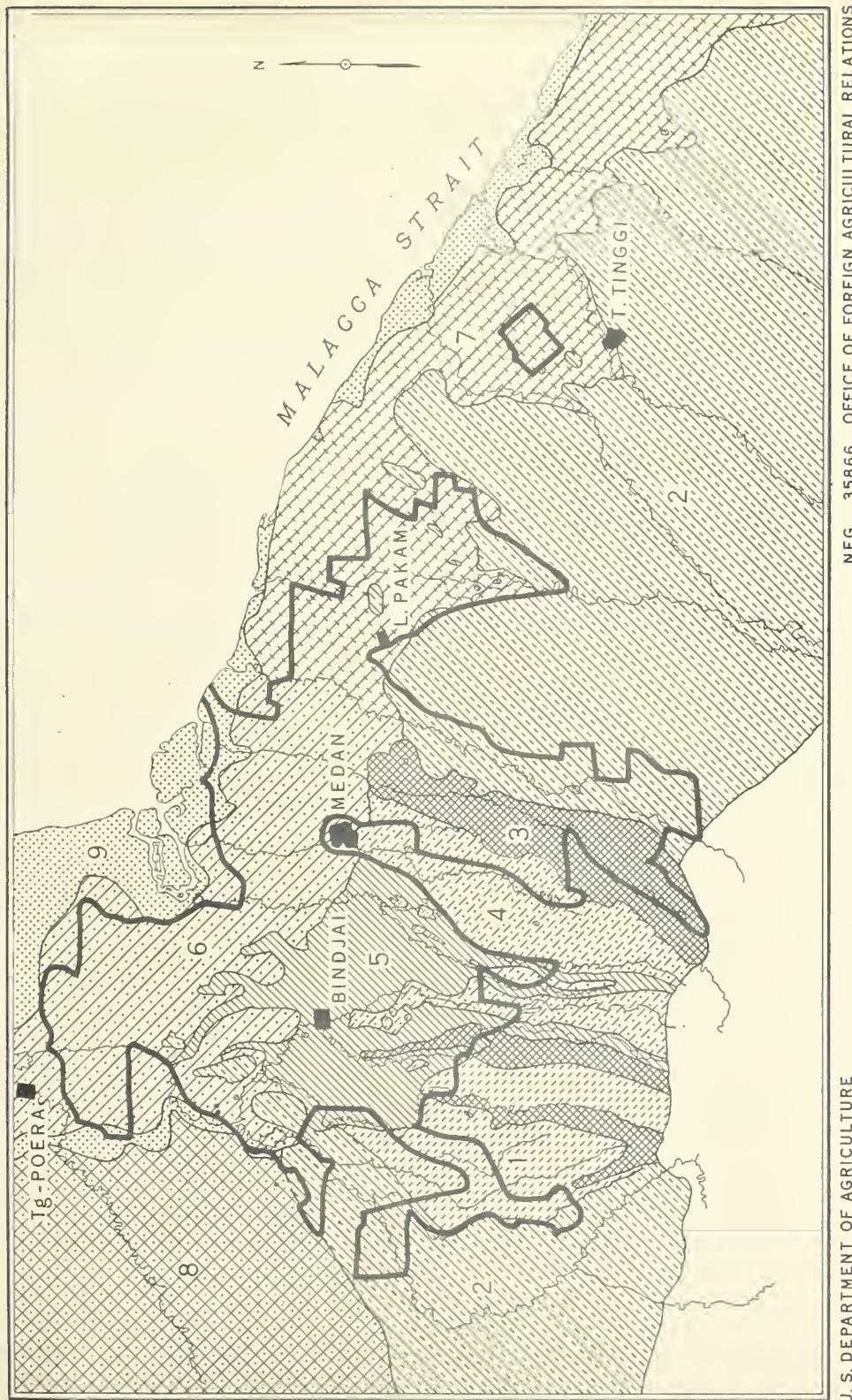


Figure 2. - Boundary of Sumatra wrapper leaf tobacco district and soil types in the district:  
1, liparitic-dacite; 2, liparite; 3, dacitic mud-streams; 4, dacitic; 5, andesitic  
mud-streams; 6, alluvial from dacitic andesitic tuff; 7, alluvial from  
liparitic tuff; 8, soil from older marine rocks and sediments  
(not used for tobacco); 9, unclassified.

Type 2 - Liparite is a red-clay loam with a pH of 5.3 to 5.5. Granville wilt is moderate to bad. The tobacco grown is inferior to that from the other soils in the district, and the average price was 0.90 guilder per half-kilo (\$0.45 per pound).

Type 3 - Dacitic mud-streams is a dark brownish-red sandy loam with a pH of about 6. The extent of Granville wilt in tobacco grown on it is irregular, in some places bad, and in others does not occur. It is the best tobacco soil in the district, and leaf grown on it sold for 1.99 guilders per half-kilo (\$0.99 per pound).

Type 4 - Dacitic is also a dark reddish-brown loam but with somewhat less sand than Type 3. It has a pH of 6.2 to 6.7. Tobacco grown on it is subject to greater damage from Granville wilt than that on any of the other soil types. Leaf from the soil is below average in quality and sold for 1.34 guilders per half-kilo (\$0.67 per pound).

Type 5 - Andesitic mud-streams (black dust) soil is grey when dry and black when wet. It is a sandy soil with much silt and has a pH of about 6.5. There is no Granville wilt in tobacco grown on the soil except in places where there are outcroppings of subsoil derived from older marine rocks. Tobacco grown on it is somewhat above average in quality and the price has been 1.70 guilders per half-kilo (\$0.85 per pound).

Type 6 - Alluvial soil derived from dacitic-andesitic tuff. It varies in texture from white clays to clay loams that are light to dark yellowish browns, and brown sandy soils. The pH varies, and is slightly acid to acid for each sub-type. Granville wilt is usually very bad in the clay soils, is limited in the loams and rarely occurs in the sandy soils. Tobacco from this soil type is as a whole of superior quality and the average price has been 1.81 guilders per half-kilo (\$0.90 per pound).

Type 7 - Alluvial soil derived from liparitic tuff. It also varies from clays to sands that are quite similar in color to Type 6; however, it contains less minerals and is somewhat deficient in plant food. The pH and extent of Granville wilt in tobacco vary with the soils of different physical properties about as in Type 6. Tobacco from it is somewhat inferior in quality and the average price has been 1.16 guilders per half-kilo (\$0.58 per pound).

Type 8 - Soil derived from marine rocks and sediments. It is quite different from the volcanic-tuff soils and is not used for tobacco. It varies from clays to sands and is usually alkaline in reaction.

Climate: Temperature in the district is relatively uniform throughout the year and the daily range is small. At Medan, which is in the center of the district, monthly averages vary between 77° F. in December, the coolest month, and 81° F. in May, the hottest month. The yearly average is 78° F. Daily fluctuations throughout the year average about 15° F. They are greatest during the drier months February to April, and June to July than during other seasons in the year. Humidity is relatively high throughout the year. It averages 84 percent and varies between months from 82 to 85 percent. Rains are frequent, but sunshine is ample, averaging 60 percent for the year.

Rainfall is relatively heavy throughout the district. The yearly average precipitation between different stations varies materially, but seasonal fluctuations are relatively uniform. Sections of highest rainfall are the plateau and foothills, and those of lowest, near the coast. The average annual rainfall of ten selected stations in the district ranges from 71.9 inches at Belidan to 157.1 inches at Petain. For the district as a whole, the average annual is about 103.5 inches, and monthly averages vary from 5.3 inches in February to 13.4 inches in October.

Estate Management and Cultural Practices: During recent years the entire production of Sumatra wrapper leaf has been grown by seven companies, of which four, known as the big four, have produced approximately 95 percent of the total. The companies have large estates, a total of 47 in 1937, which are lands held by long-term leases. 1/ The total acreage of tobacco grown by the separate companies varies from about 200 acres in the case of the smallest company to over 15,000 acres grown by the largest company. All of the companies grow some rubber and certain other plantation crops, but in most cases tobacco is the major crop.

The management of the estates is in the hands of Europeans, and a large number of laborers is employed for field operations. In 1937, there were some 400 Europeans employed as managers and sub-managers, and on December 31, 1937,

1/ The matter of land tenure in the district is extremely complicated. "For planting tobacco the Europeans originally obtained land concessions of various sizes from the Sultan of Deli. Some of these concessions were for 50, some for 75 and some for 100 years. These 'Sultan's Grants', as they have ever since been known, were rather informal transactions and were not drawn up in accordance with the provisions of the Netherlands Indian Civil Code. In the first place, the earliest ones were made at a time when there was practically no civil administration of Deli on the part of the Colonial Government, and in the second place, the Sultans, as natives, were outside the scope of application of the Civil Code. Thus these early grants were (and have remained) without any definite status in Netherlands public law.

"Various attempts were made to regulate this situation, the most important of which was a law which went into effect on May 6, 1915. This law provided: (1) that when the Sultan issued land to persons to whom the Civil Code applied, the transaction must be registered in conformity with the provisions of the Civil Code, and (2) that a prior condition of such a transaction must be the issuance of a declaration by the head of the local or provincial administration testifying to the Sultan's authority to make such a grant. But the Civil Code was not (and is now not) applicable to natives and those having the status thereof. Thus there are at present in existence three kinds of Sultan's Grants: (1) those made prior to the law of 1915, (2) those made subsequent to and in conformity with the law of 1915, and (3) those made to persons not subject to the Civil Code. These last grants were not registered with the appropriate office of the Netherlands Indian Government but with the Sultan's own native tribunals.

"Extremely few if any of these Sultan's Grants were actually freehold grants; there are only three of them in the present city of Medan. The very great majority were in the nature of long-term leaseholds." (From unpublished report by Sidney H. Brown, American Consul at Medan.)

the total number of laborers employed was 74,405. Of these, 7,735 were contract laborers hired under contract for a period of 5 to 6 years for work on specific plantations, and 66,670 were free laborers employed on a daily, monthly, or piece basis. About 36,000 of the laborers were Javanese men, 27,000 were Javanese women, and over 10,000 were Chinese men and women. Only a limited number of Sumatra natives are employed, as the intelligence and industry of these people are below those of the Chinese and Javanese. Foremen and supervisors are largely Chinese. The Chinese also grade most of the crop. Laborers are paid according to wage scales fixed by the Deli Planters' Association (an Association supported by all companies in the district). Wages consist of a basic amount in cash, either on a day basis or at a piece rate. Slightly higher wages are paid for old hands than for new recruits, and wages for women are lower than for men. In 1937, the average cash wage for men was about 28 cents per day (0.515 guilder) and for the women about 16 cents per day (0.29 guilder).

Dormitories or barracks are provided as living quarters for the laborers. In addition, they receive a discount on the purchase of foods and free medical attention. In 1937 these services amounted to an additional 3 cents per day (0.055 guilder). In many cases the laborers are also provided with land to be used as gardens.

The estates are large and well laid out. They vary in size from about 12,000 to over 50,000 acres. The land devoted to tobacco is carefully surveyed and laid off in blocks of fields. The average size of a single field is about 1.6 acres and it accommodates approximately 16,000 plants. The same field or block of fields is used for tobacco only once in 8 years. In most cases they are cleared of timber, the timber being burned off and tobacco immediately planted. Tobacco is grown in the spring months and is followed in the same year with a crop of rice.

The planting dates for tobacco in different sections of the district vary in accordance with altitude. In the upland sections seedbeds are prepared in December and in lowlands during the second week in January. Transplanting is done from 40 to 45 days after the sowing of seed beds. Harvesting extends from April until June or about 90 days after transplanting.

After the rice crop following tobacco is harvested the land is usually allowed to grow back to jungle and is not disturbed for 7 years, when it is again cleared and planted with tobacco. The only exception to this procedure is on some of the land where Granville wilt is bad. The estates in these sections plant part of their fields to Mimosa invisa, a tropical leguminous plant which has the appearance of vetch. Fields planted with Mimosa invisa for the 7-year period between tobacco crops are found to be free of Granville wilt. 1/

1/ The full significance of Mimosa invisa in checking of Granville wilt is not known but it is generally believed that its effectiveness in this respect is due, (1) to the fact that it is not a host for the bacteria causing the disease, (2) that it has a rank growth and checks the growth of weeds that would be hosts for the bacteria, and (3) that it improves the soil structure which results in a greater development of numerous kinds of soil micro-organisms, some of which are apparently destructive to the bacteria causing the disease. The latter theory is supported in part by the fact that liming of the land, which improves the soil structure, also checks the disease; however, lime reduces the acidity of the soil, which may be a means of checking the growth of the disease bacteria.

Leaf from such fields, however, is considered inferior in quality to that grown on jungle land. It tends to be coarser and many planters believe somewhat darker in color, both of which are objectionable qualities.

Seedbeds are laid out on freshly cleared land that has been built up to a height of about 1 foot above the original level. Steam treatment of the beds for disease control is a common practice on some estates, but others do not use any form of seedbed sterilization. The beds are well fertilized and are covered with a light muslin at a height of about 3 feet (see figure 3). This is to prevent damage to young plants by heavy rains and sunshine. When the plants approach the size at which they are transplanted the covers are removed.

The fields to be planted with tobacco are laid off in double rows about 40 inches apart with small ditches between them and large drainage ditches at the end of the rows. The transplanting of a single field of 16,000 plants is done by sections over a period of about 3 weeks so that the leaves will ripen progressively.

Practically the entire process of cultivating the crop is by hand. Animals or tractors are used for making ditches between fields but all other operations are by hand. The rows and ditches between them are prepared with heavy hoes or mattocks and cultivation is with hoes.

Plants in the seedbeds are sprayed about five times with a liquid arsenate of lead spray. Two applications of the same spray are also made within 10 days after transplanting. Following this the plants are dusted about every 4 days with a mixture of soil and 5-percent arsenate of lead powder, or, as has been the practice in the past few seasons, soil and 5.5-percent bariumfluosilicate. Worms not destroyed by spraying and dusting are caught by hand. This work is done by women and children who work on a daily wage basis, or are paid about 11 cents for each 100 worms they catch.

Fertilizers are extensively used. A small portion of guano fertilizer is placed in holes in which plants are set. Phosphate is applied in the form of basic slag. The potash requirement is usually supplied in the form of ashes from tobacco stalks; however, sulphate of potash is used in the darker soils that are low in potash.

Most of the plants are topped when the flower begins to form; however, the portion of the crop on land that tends to produce a heavier leaf is allowed to bloom and seed. The crop is harvested by priming and as a rule only two leaves are taken from each stalk every 2 days. Great care is taken to prevent the leaves from being broken. They are carried in baskets by hand to curing barns adjacent to the fields and priming is done only during the morning when the dew is heavy.

Curing: The curing of Sumatra wrapper leaf is accomplished by air-curing followed by a sweating or fermentation process. The curing sheds are constructed of poles with a roof of palm leaves. The sides and ends are formed by continuous rows of doors made of bamboo splints, which can be opened for ventilation (see figure 4). The sheds are constructed so that they can be torn down and rebuilt at various places on the plantation as the blocks of tobacco fields are rotated.

For curing, the tobacco leaves are strung in the morning or late evening on strings of which each end is tied to a bamboo pole. Each leaf is examined before stringing. Worms or insects are picked off and damaged leaves are removed and cured separately. The strings of leaves hang in the sheds from 18 to 22 days or until they have become dry. During this period the ventilating doors are regulated to assure proper ventilation and to prevent excessive dampness and heating. During the damp periods, most of the ventilation is shut off during the night and early morning, and wood or charcoal fires kept going in order to prevent excessive humidity. When dry, the strings of leaves are removed from the bamboo poles and each string tied into a hand. The hands are then placed in baskets and hauled to the plantation's fermentation shed. This is only done in the early morning or late afternoon when there is less danger of the leaves being broken.

The fermentation sheds are closed, relatively dark buildings, with little ventilation, but adjacent to them are well-lighted grading and sorting rooms. Tobacco brought to the sheds is weighed, and hands of leaves of uniform quality are assembled to be fermented in a shingle block. This latter process is simplified by the removal of inferior leaves, when they are strung, and further by the fact that harvesting and curing are so regulated that leaves from the same position on the plant arrive at the fermentation sheds together.

Fermentation of the leaf is accomplished by four sweating processes. For the first sweating of a quantity of tobacco the leaves are piled into eight rectangular bulks with rounded corners, the outside wall being formed by placing the hands with their butts to the outside (see figure 5). The bulks each contain about 4,000 to 6,000 pounds, the size being governed by the quantity of leaves of similar grade arriving from curing barns. The bulks are allowed to stand for about 5 days, during which time the temperature at the center rises to about 129° F. They are then repiled into four larger bulks, each composed of two of the original small bulks. The sweating or heating process again occurs, but usually requires approximately 3 days longer than the first sweating. This process is followed by two more sweatings, one in which the tobacco is piled in two bulks, and the last in which it is piled in one bulk. The last sweating requires about 18 to 20 days.

With each repiling, the hands of leaves are shaken out and well aired. 1/ In building the next bulk into which they are placed, the hands on the outside of the previous bulk are placed in the center. They are also reversed from top to bottom.

1/ The Deli Planters' Association, from funds raised from all of the companies in 1937, installed an ordering machine as an experiment on one of the plantations. The machine provides for temperature and humidity control, air circulation, and a shaking process that does less damage in the breaking of leaves than the hand method. The operation of the machine requires almost as much labor in loading and unloading as is required by the hand method; it is also an expensive installation, and in 1938 did not prove to give a better curing of the leaf. It is, therefore, doubtful if it will become of general use.

The following tabulation shows the actual dates on which bulks were made, when they were broken, and the temperatures attained in the fermentation of a quantity of sand leaves in 1937.

A. Bulks (4,409 pounds)    B. Bulks (8,818 pounds)    C. Bulks (17,636 pounds)

Date begun	Date ended	Tempera-ture date °F	Date begun	Date ended	Tempera-ture date °F	Date begun	Date ended	Tempera-ture date °F
1.Apr. 11	Apr. 16	129.2	1.Apr. 17	Apr. 20	129.2			
2.Apr. 11	Apr. 16	128.3				1.Apr. 28	May 12	127.4
3.Apr. 14	Apr. 19	129.2	2.Apr. 20	Apr. 28	129.2			
4.Apr. 14	Apr. 19	130.1						
5.Apr. 17	Apr. 22	128.3	3.Apr. 22	May 3	129.2			
6.Apr. 17	Apr. 22	130.1				2.May 3	May 17	128.3
7.Apr. 20	Apr. 25	130.1	4.Apr. 25	May 4	128.3			
8.Apr. 20	Apr. 25	129.2						

D. Bulk (35,274 pounds)

Temperature at different places in the bulk °F

Date	Left		Center		Right	
	Above	Below	Above	Below	Above	Below
Begin --						
May 22.....	105.8	109.4	102.2		95.0	109.4
" 23.....	107.6	113.0	107.6		102.2	113.0
" 24.....	109.4	115.7	112.1		107.6	113.9
" 25.....	111.2	116.6	114.8		110.3	115.7
" 26.....	112.1	117.5	116.6		113.0	117.5
" 27.....	113.0	118.4	117.5		113.9	118.4
" 28.....	113.0	118.4	118.4		114.8	118.4
" 29.....	113.0	120.2	120.2		116.6	118.4
" 30.....	113.9	121.1	121.1		118.4	120.2
" 31.....	114.8	122.0	122.0		120.2	120.2
June 1.....	114.8	122.0	122.9		122.0	121.1
" 2.....	114.8	122.9	123.8		123.8	122.0
" 3.....	114.8	122.9	123.8		123.8	122.0
" 4.....	114.8	123.8	124.7		124.7	122.0
" 5.....	114.8	123.8	125.6		125.6	122.9
" 6.....	115.7	123.8	125.6		125.6	123.8
" 7.....	115.7	123.8	126.5		126.5	123.8
" 8.....	115.7	124.7	127.4		127.4	124.7
Ended --	June 9.....	116.6	125.6	127.4	127.4	124.7

Cost of Production and Marketing: Detailed information regarding cost of producing and marketing Sumatra wrapper leaf is not obtainable. Statements obtained from estate managers in the district in 1938 were to the effect that

total cost of production and delivery to the Netherlands, all overhead expense included, for the years immediately preceding 1938 was about 1.13 guilders per pound, or at the average exchange from 1934 to 1938 about 70 cents per pound. This in terms of guilders is about equal to the average costs of a single company for the years 1932 to 1935 and agrees approximately with average costs in 1935 and 1936 of the four leading producing companies as derived from financial statements of the companies.

Table 5.- Prices received, cost of production, including delivery to the Netherlands, and net profit of a single tobacco company in the Sumatra wrapper leaf district, 1932 to 1935

From unpublished report of American Consul Brown at Medan.

Total returns from tobacco sales, dividends paid and changes in reserve funds of four companies which produced over 90 percent of the crop in 1936 and 1937 indicate that production costs and delivery charges to the Netherlands averaged 1.11 guilders per pound in 1935 and 1.10 in 1936. Prices received by the companies average 1.37 and 1.24 guilders per pound respectively, which gives a net profit on the 1935 crop of 0.16 guilder per pound and 0.14 guilder on the 1936 crop. These estimates are subject to error as the financial returns of the companies do not give details regarding improvements in plants, etc., which perhaps should not have been charged against the crops concerned; however, they support the reported average cost of production of about 1.13 guilders per pound.

### Sumatra West Coast (Native Tobacco District)

Native Kerf tobacco is produced throughout the island of Sumatra but the west-coast district near the port of Padang is the only area where production substantially exceeds the demands for local consumption. It is the principal district from which exports originate and from which Sumatra Kerf tobacco is shipped to other islands of the archipelago.

Sumatra native tobacco is grown entirely by natives and the acreage per grower is very small, sometimes limited to a few rows in his garden. Total production on the island is approximated at about 10,000,000 pounds annually and it is believed that something near half of it is produced in the west-coast district. The crop is grown throughout the year but production in the west-coast district is largely during the summer months.

Figure 3. - Sumatra wrapper-leaf seedbeds.

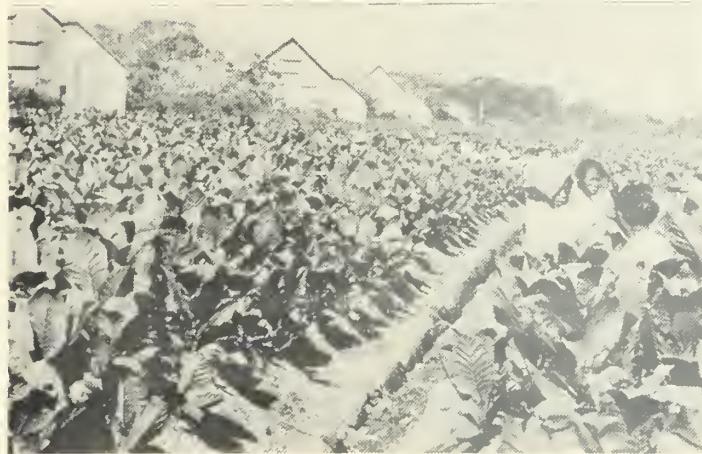


Figure 4. - A field of young plants of Sumatra wrapper leaf with curing sheds in background.

Figure 5. - Bulks of Sumatra wrapper leaf in fermentation sheds.

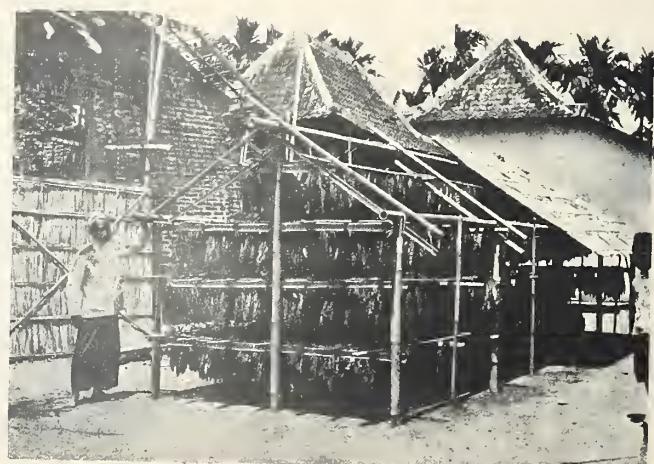


Figure 6. - A field of native Java tobacco.



Figure 7. - Sun-curing of Krossok.

Figure 8. - Shade-curing of Krossok.



Temperatures in the district average slightly higher than those in the east-coast district of Deli. The relative humidity is lower but average annual rainfall is higher and the seasonal variation somewhat different. The average annual precipitation is about 139 inches. July and August, the months when most of the tobacco is being harvested and cured, is the period of least rainfall. During these months precipitation averages about 7.5 inches. Rainfall is substantially greater during other months of the year and is highest in November with an average of 17.1 inches.

Soils in the district are largely derived from a mixture of older marine rocks and younger volcanic material. They are neutral to slightly acid in reaction. The tobacco grown on them is heavy-bodied and has a strong aroma. The cultural practices vary materially. In a few cases the crop is planted directly in the field; however, seedbeds are usually used. Definite rotations with other crops are not followed. The tobacco is often grown year after year on the same land with no intervening crops. If a crop is planted between the crops of tobacco it is usually red peppers. It is not uncommon for as many as three harvests of tobacco to be taken from the same plant. This is accomplished by allowing suckers to grow from the stalk after each priming.

Curing practices followed in the district, and which are general for Kerf tobacco at all other places in the Netherlands Indies, are relatively uniform. The green leaves are first tied in bundles of about 50 leaves each, where they remain from 1 to 5 days or until a desired color is developed; 1 day in case a yellow color is desired and 4 to 5 days for dark coloring. Following this process the leaves are shredded with a large knife and are spread in the sun on bamboo matting until dry, which requires 4 to 5 days. The bamboo mattings holding the shredded leaves are usually carried indoors at night; however, it is general in the case of light tobacco for them to be left out in the night dew 2 or 3 hours each night, and for the dark tobacco to be left out in the dew 1 or 2 whole nights. The tobacco is ready for consumption immediately after curing, but the better grades are usually stored or aged for a few months, during which time the product undergoes a fermentation process.

Light tobacco cured by the above process is used in cigarettes and strootjes and the dark tobacco in strootjes and chewing tobacco.

#### Vorstenlanden Java (Cigar Tobacco District) 1/

Vorstenlanden cigar leaf which is grown in middle Java is considered the best Java cigar tobacco. Its production started before that of Sumatra wrapper leaf but since 1874 the output has always been below the production of Sumatra wrapper leaf. From 1875 to 1892 production ranged between 1,200,000 pounds and 3,600,000 pounds annually. It was increased substantially in 1893 and the years immediately following. By 1913, the peak year in production, it totaled about 32,000,000 pounds. Production declined sharply during the World War but since 1921 has ranged between 19,200,000 and 26,900,000 pounds annually.

1/ As in other parts of central and east Java, some native Kerf tobacco is produced in the Vorstenlanden district. Its commercial importance, however, is limited. Its cultivation and curing are essentially the same as practiced in the Sumatra West Coast District.

Vorstenlanden cigar leaf is not considered equal in quality to Sumatra cigar wrapper leaf. It is used primarily in cigars as wrapper, binder, or filler. Small quantities of the lower grades are used in pipe tobacco. Purchases for use as cigar wrappers are largest in years when the leaf happens to be of especially good quality and when the quality of Sumatra wrapper leaf is below average. The leaf has a dark-brown or reddish-brown color and fine aroma. Most grades are moderately thin but in general lack the elasticity essential for wrapper leaf.

Practically the entire production of Vorstenlanden leaf is on volcanic soils of comparatively recent origin located at the base and on the slopes of Mount Merapi. The soils are composed of grey volcanic tuff that has been washed down from the Merapi volcano. They are sandy loam in texture, are rich in minerals and slightly acid to acid in reaction.

Temperatures in the district do not vary materially throughout the year. Monthly averages at Klaten, a town near the center of the district, range from 77° F. in February, the coldest month, to 80° F. in October, the hottest month. The yearly average is 78° F., the yearly average maximum 88° F., and average minimum 72° F. Humidity is high during the rainy months, November through June, when averages range between 82 and 89 percent, but it is lower during other months of the year, when it averages around 75 percent.

Rainfall is relatively uniform throughout the district. Variations in yearly annual precipitation between ten selected stations range from 61.2 to 92.1 inches. The yearly rainfall for the district as a whole is below that of most sections in Java and averages 78.5 inches. There is a decided seasonal fluctuation in rainfall. It is relatively heavy during the late fall and winter months, averaging 13.0 inches in February, and low during the summer months, averaging only about 1.2 inches for each of the months of July, August, and September.

Vorstenlanden leaf is grown exclusively on estates of leased land that are controlled and managed along lines very similar to those followed for Sumatra estates. For the past few years production has been in the hands of eight companies, of which two have grown about two-thirds of the crop. The eight companies lease a total of 20 or more separate estates and the area devoted to tobacco since 1920 has ranged between 14,300 and 19,100 acres. The tobacco lands are leased from the two sultanates in the district for long-term periods, usually 50 years. The leases bind the companies to an exact procedure as regards the use of land. Tobacco can be cultivated only once in 2 or 3 years. Between tobacco crops, rice and other crops are grown by natives and without the supervision of the estate companies. The leases are so written that the companies pay yearly rentals only on the land actually planted to tobacco. Yearly rentals for the years that the land is used for rice and products other than tobacco are collected from the natives who grow those crops.

The companies as a group maintain overhead organizations, and an experimental station, which are similar to the institutions maintained by the Sumatra wrapper-leaf companies. Production is carried on on a highly scientific basis and methods to improve quality are sought continuously.

The crop is grown from July through October and harvested in November and December. Cultural and curing practices in the Vorstenlanden district compare with those of the Sumatra wrapper district except for such differences as are necessitated by varying conditions. One of the principal differences is that irrigation is generally used; however, in most seasons rainfall is sufficient except during limited periods. Irrigation is used only when it is necessary to keep the crop growing normally. It has been found that leaf grown with irrigation is coarser and in general inferior in quality to that grown when rainfall is ample and irrigation is not used; as a consequence irrigation is kept at a minimum.

#### Banjoemas (Cigar Filler and Binder District) 1/

The Banjoemas district is a small area in central Java, east of the town of Banjoemas. The production in this district of tobacco of sufficient quality for export or use in domestic cigars has in recent years averaged between 1,500,000 and 2,500,000 pounds annually. The leaf is comparable in types with Vorstenlanden cigar leaf and in years of ample rainfall the quality is something near that of Vorstenlanden leaf.

Soils in the district are red or brown lateritic earths derived from crystalline schists and metamorphic rocks, or from andesitic rocks and breccias of the tertiary age. They are sandy to sandy loam in texture. Temperatures in the district are relatively uniform throughout the year. Relative humidity and rainfall have seasonal fluctuations comparable with those in the Vorstenlanden district; however, the average rainfall is higher than in Vorstenlanden and averages about 151.1 inches. December, with an average rainfall of 21.6 inches, is the wettest month and August, with an average of 2.6 inches, is the driest.

Tobacco for export from the district is grown from July through October and harvested in November and December. Its production is largely in the hands of a few estates; however, some tobacco grown by natives is purchased by estate owners and cured and fermented by them. Production and curing practices on estates are somewhat similar to those in the Vorstenlanden and Sumatra wrapper-leaf districts.

#### Kedoe (Cigar Filler and Native Tobacco District)

The kedoe district is in central Java between the Vorstenlanden and Banjoemas districts. In recent years, total production of Krossok in the district, of a quality suitable for export or for use in domestic cigars and cigarettes, is believed to have averaged between 10,000,000 and 13,000,000 pounds annually. 2/ In addition there is a substantial production of Kerf tobacco.

The tobacco in the district is grown entirely by natives. It is a general practice for the lower leaves on the plant to be primed and air-cured into Krossok, and the leaves higher up on the plant prepared into Kerf tobacco.

1/ Some native Kerf is produced in the Banjoemas district. It is handled the same as in west Sumatra and in Vorstenlanden Java except that in mountain districts where sunshine is limited the shredded tobacco is cured over fires.

2/ The term Krossok in general denotes tobacco that is produced and cured by natives in leaf form.

The Kedoe Krossok is a relatively small leaf type, heavy bodied, with a fair amount of oil and gum, but has little stretch. It is dark brown in color and has a strong aroma. In Europe it is used primarily for cigar filler, but in the Netherlands Indies considerable quantities are also used in cigarettes and strootjes. The leaf is decidedly inferior in quality to Vorstenlanden and Banjoemas leaf. Kedoe Kerf tobacco is used only in domestic cigarettes, strootjes, cigars, and for chewing purposes.

Production in the Kedoe district is largely on soils derived from volcanic tuff of earlier periods. They are acid in reaction and have a high mineral content. Average annual rainfall in the district is about 154.3 inches, and the seasonal fluctuation is somewhat similar to that of the Vorstenlanden district.

All of the Kerf tobacco and most of the Krossok produced in the district is cured by natives. The Krossok is sold to local dealers for domestic consumption or export. There are, however, a few organizations that purchase the leaf from natives green or only partially cured and complete the curing and fermentation processes. Production in the district is continuous throughout the year, but late-summer and fall crops represent over half of the total and account for most of the better quality tobacco.

#### Besoeki (Cigar Filler and Binder and Native Tobacco District)

Tobacco is grown throughout the residency of Besoeki, which is located at the extreme eastern end of the island of Java, but production is concentrated in the southwest district of the residency, which constitutes the Besoeki district proper. The crop in this district exceeds that of other districts in Java and it is apparently the area where tobacco production in Java began on a commercial scale.

As early as 1857 sales of Besoeki leaf in the Netherlands totaled approximately 340,000 pounds. Production probably greatly exceeded this amount, as the district has for many years been important in the production of tobacco for domestic consumption. For the 5 years preceding 1938 the total production of a quality suitable for export or for domestic use in cigars and cigarettes averaged about 45,000,000 pounds annually, of which approximately 32,000,000 pounds was grown in the southwest district. Production in the district is comprised of two general types: a dark cigar leaf for which the production in recent years has averaged about 25,000,000 pounds annually, and a lighter type with an average annual production of about 7,000,000 pounds. The cigar type ranges in color from brown to dark reddish brown. The leaf is thin, lacks oil and stretch, but has a fair aroma. It is used almost entirely for filler and binder. Its use as wrapper leaf is restricted to small quantities of the better grades used on low priced cigars. The light-type or native-type Besoeki tobacco is medium brown in color and according to American standards would be classed between our light and dark air-cured types. The leaves are relatively short and moderately thin. Oil content is low and the texture somewhat papery.

Production of the two Besoeki types is intermingled. The cigar type is grown exclusively on volcanic soils of recent origin and the lighter or native type on both volcanic and lateritic soils, the latter having been derived from igneous material or andesitic rocks and breccias. Temperature in the district

is relatively uniform throughout the year and averages about 78° F. May is the hottest month with an average of 80° F., and July the coolest with an average of 76° F. Average annual rainfall varies substantially in different sections of the district but seasonal fluctuations are fairly uniform throughout the area. The average annual figures of ten selected stations range from 73.5 inches to 125.7 inches. The average of the ten stations is 90.3 inches. Rainfall is lowest in July, August, and September when monthly averages for the district range near 1.5 inches and is highest from December to March when monthly averages are above 12.0 inches.

Tobacco in the Besoeki district is grown throughout the year; however, most of it is produced in two distinct seasons. There is an early crop known as Vooroegst tobacco, which is grown and cured almost entirely by natives, and a late crop, of which over half can be classed as estate tobacco. All of the tobacco grown by natives in the district is in general superior to other native tobacco of the island. Most of it is cured into Krossok and large quantities are exported; however, a part of the leaves from the higher positions on the plant from both the early and late crops grown and cured by natives are prepared as Kerf tobacco for use in domestic cigarettes, strootjes, and chewing tobacco.

The early crop or Vooroegst tobacco is planted in February and March and harvested in June and July. It is entirely of the light type and is grown only by natives on unirrigated land. The Krossok from the district is either exported to Europe, where it is used largely for pipe tobacco, or is sold locally for use in domestic cigarettes and cigars. The late crop grown during the second half of the year on irrigated land, and whether produced by natives or under the supervision of estate companies, is largely cigar type, most of which is exported to the Netherlands.

Cultural practices followed by natives in the Besoeki district are decidedly better than those of natives in most other sections of Java and Sumatra. The quality of leaf is decidedly superior to most native tobacco but it is inferior to strictly estate leaf. Cultural and curing practices followed by natives are somewhat similar to those followed by estate owners; however, they do not use commercial fertilizers to the extent used by estates, insect control is not so carefully carried out, and curing, in most cases, is done with less care than on estates.

Estate management in the Besoeki district differs materially from that in the Sumatra and Vorsterlanden districts. It is similar in that the estate companies maintain an overhead organization and a research station. They also cooperate in controlling leaf prices, wage scales, and the supply of leaf grown and marketed. Their land leases and labor arrangements, however, are materially different. Land in the Besoeki district is almost entirely in the hands of natives. Companies with so-called estates, of which there were 15 in 1937, lease tobacco land from natives usually for a nominal rental equivalent to the land tax. In most cases, the land is irrigated rice land and is only used for tobacco once in 2 or 3 years. The general practice is for the companies to arrange through contracts for the natives from whom the land is leased to grow tobacco for them. Production by estate companies through the employment of hired labor is very limited.

A native who produces leaf for an estate company obtains seedlings from the company. He is required to follow instructions of the company as to cultural practices, which in general are somewhat similar to those in the Vorstenlanden and Sumatra districts. The leaf when grown is, according to a previous arrangement, delivered to the company green or after air-curing in sheds or barns owned by natives. The contracts also usually guarantee the native some compensation for his labor in case the entire crop is lost as a result of floods or other abnormal occurrences. All risks that can be classed as normal, such as damage from disease, insect pest, and an abnormal season, must, however, be taken by the native.

Leaf delivered green to the estate companies is air-cured in company-owned barns, the labor involved being hired by the company. The fermentation process that follows air-curing is also entirely at the expense of the company. The better grades of leaf handled in this manner are known as Blad (leaf); lower qualities are known as Hangkrossok.

Leaf delivered to estate companies after air-curing by natives is fermented by the company entirely at its expense. It is inferior in quality to Blad and Hangkrossok and is sold under the designations Kampongkrossok or Krossok. 1/

During recent years the research station, maintained by the Besoeki estate companies, and certain individual companies have conducted experiments in the district with American flue-cured type. Their interest in flue-cured has resulted from low prices during recent years for Besoeki Krossok and an increase in both domestic and export demand for light cigarette tobacco. Trial plantings have given satisfactory results as to quality but production costs were substantially higher than those in the established flue-cured district of Java. Production in 1937 was limited to that from approximately 75 acres grown by a single estate company. The company planted a somewhat larger acreage in 1938, but there was no indication that other companies would soon take up production on a comparable scale.

#### Rembang and Kediri (Flue-cured and Native Tobacco Districts)

The Rembang and Kediri tobacco districts are located in the eastern Java residencies of Bodjonegoro and Kediri. The Rembang district covers most of the central part of Bodjonegoro residency and the Kediri district the central part of Kediri residency.

Native Tobacco: The production of native-type tobacco in the districts, and especially in the Rembang district, is large. It is inferior in quality and somewhat comparable with Kedoe tobacco. During recent years the portion of the crop suitable for curing into Krossok has averaged around 15,000,000 pounds annually. The total production, including that prepared as Kerf tobacco, has been about 40,000,000 pounds annually.

The bulk of Rembang and Kediri native tobacco is light brown to light chocolate-brown in color. It is papery in texture, lacks oil and stretch, but has a fair to good aroma. The Krossok from the crops is purchased by Europeans, primarily for use in pipe tobacco, and, in the case of the French and Spanish monopolies, also for use in cigarette. It is considered by European buyers to

1/ The two terms Kampongkrossok and Krossok are almost synonymous. Kampongkrossok, which means village Krossok, differs only from Krossok in that it is grown from seed furnished by estate companies and may therefore be somewhat superior to ordinary Krossok.

be somewhat comparable with Maryland and other American light air-cured types. It is used in Java in cigarettes. Kerf tobacco from the districts is used locally in cigarettes, strootjes, cigars, and as chewing tobacco.

The tobacco is grown on a variety of soils, but the bulk of production is on lateritic earths, which in general are alkaline in reaction. They vary widely in color and texture but are predominantly brown or black clays and clay loams. Certain of them are similar to the adobe soils of the United States.

Like other sections of Java, temperatures in these districts are relatively uniform throughout the year, averaging near 79° F. Average annual rainfall in the two districts is approximately the same. Ten stations in the Rembang district and five in the Kediri district gave averages of 81.7 inches and 85.8 inches, respectively. Seasonal variation in precipitation is also similar and compares with that in the Besoeki district. Average monthly rainfall during July, August, and September ranges near 1.5 inches, and monthly averages from December through March each exceed 12.0 inches.

Native tobacco in the Rembang and Kediri districts is grown exclusively by natives and without supervision of estate companies. Production is continuous throughout the year, but a late-season crop accounts for most of the total. The leaf for export and domestic cigarette manufacture is handled somewhat similarly to Besoeki Krossok. It is grown and either air- or sun-cured by natives and then purchased and fermented by dealers.

American-type Flue-cured: American-type flue-cured leaf grown near Bodjonegoro in the Rembang district represents almost the entire flue-cured production in the Netherlands Indies. Production at all other points is as yet largely limited to trial plantings. 1/ Expansion in production near Bodjonegoro is due primarily to the efforts of a single cigarette manufacturing company. 2/ Prior to the starting of flue-cured production in the district, this company conducted experiments and trial planting with American flue-cured types at four widely scattered points in Java. Satisfactory results as to quality were obtained at each point where trials were made, but the Bodjonegoro district was found to offer the best opportunity for expansion. Soil in the district was found to retain a high moisture percentage, which facilitates production and curing during the dry season, when best quality leaf can be obtained. Production costs, due to low land values and lower labor costs, were found to be below those at other places where trials were made. Returns to farmers for native Rembang leaf are below those for tobacco in other districts of Java, and natives in the district could be more easily induced to grow flue-cured than those in other sections.

1/ A number of estate tobacco companies whose estates are located at various places in Java have during recent years tried the production of flue-cured tobacco in the hope that it might be economically produced both for sale domestically and export to Europe. The Netherlands Indies Government has also become interested in the prospects for increased sale of Java flue-cured leaf. It began experiments with the leaf in 1935, and in 1938 established a flue-cured experimental farm in the Bodjonegoro district. They also plan trial plantings at numerous points in the island. The government's interest in flue-cured results from low prices and decreased exports of Krossok in recent years.  
2/ British American Tobacco Company. Following the lead of this Company, two other private agencies, one in 1935 and one in 1938, began the expansion of commercial production in the Bodjonegoro district.

The district was further favored by the fact that it is located adjacent to a railroad that has direct connections to nearby towns in which cigarette factories of the interested company are located.

Table 6.- Approximate acreage, production (farm weight), and price of tobacco from American flue-cured seed in Java, 1928 to 1938 a/

Year	Acreage	Production	Price	
			Per kilo	Per pound
	<u>Acres</u>	<u>1,000 pounds</u>	Guilder cents	United States cents
1928.....	--	50	:)	:
1929.....	200	100	:)	:
1930.....	250	100	:)	
1931.....	400	200	-- 17.0	3.2
1932.....	400	200	:)	:
1933.....	1,000	500	:)	:
1934.....	2,000	1,000	:)	:
1935.....	4,000	2,000	-- 16.0	4.7
1936.....	7,500	4,000	:)	:
1937.....	9,500	3,300	17.0	4.3
1938.....	17,000	4,000	15.0	3.8
			:	:

Compiled from data from trade sources and from Agricultural Statistics Section of the Central Bureau of Statistics of the Netherlands Indies.

a/ Largely air-cured; only about 250,000 pounds of the 1937 crop and about 800,000 pounds of the 1938 crop were flue-cured.

In 1928 less than 100 acres of American-type flue-cured leaf were grown in the Bodjonegoro district. This was largely a trial planting, but commercial production began the following year. Expansion was relatively slow until 1933. By that year the acreage had increased to only about 1,000 acres. Since 1933, higher prices for American flue-cured leaf, combined with a large increase in Netherlands Indies leaf import duty (from 3.27 to 8.05 United States cents per pound) and Government regulations that required the use in machine-made cigarettes of a fixed percentage of domestic leaf, has resulted in a sharp increase in acreage. In 1934 about 2,000 acres were planted and by 1938 acreage had been increased to about 17,000 acres.

Yields per acre are substantially below the average in the United States and until 1937 averaged around 500 pounds. Yields in 1937 and 1938 were low as a result of very adverse weather conditions and averaged only about 350 and 235 pounds per acre, respectively. Production as a result of the upward trend in acreage increased from about 500,000 pounds in 1933 to approximately 4,000,000 pounds in 1938.

Bodjonegoro leaf from American flue-cured seed is somewhat similar in appearance to the American type Ila. It has about the same color and thickness of leaf but is somewhat inferior in texture. It has a fair amount of oil, burns well, has a high sugar content, and a moderately good aroma.

during recent years have averaged near 900,000 pounds annually. It is sold there primarily for use in pipe mixtures. Madura Kerf tobacco is used in domestic cigarettes, cigars, strootjes, and chewing tobacco.

Soils in the Madura district are predominately calcareous clays derived from shales and limestones. Average annual rainfall in the district is about 67.2 inches per year, but the summer and early fall months are very dry. Monthly average rainfall in August and September is 0.5 inch or less. As in most of Java, the months December through March are rainy. Rainfall is heaviest in January, the average for the month being 12.1 inches.

Tobacco production in the district is entirely in the hands of natives, and is continuous throughout most of the year. Planting extends from March through July and harvesting from June through November. Cultivation and curing practices vary. The process of curing and handling that portion of the crop purchased for export or for sale locally to cigarette manufacturers is somewhat similar to that applied to Krossok in the Java districts. The treatment accorded most of the remainder is similar to that applied to Sumatra Kerf.

#### GRADING AND MARKETING

Practices followed in the grading and marketing of tobacco in the Netherlands Indies probably vary more than those of any other country. Methods vary from those followed by the aborigines to the detailed and unique system followed in handling the estate production of Sumatra and Java. Grading varies from no grading at all in the case of much of the native tobacco to the systematic methods of estate companies, which enable leaf of different grade from individual estates to be sold in the Netherlands on the basis of samples. Market practices vary from barter between natives to sales on the Amsterdam and Rotterdam inscriptions.

#### Grading

##### Kerf Tobacco

The form in which Kerf tobacco is prepared for market largely precludes grading. In the most important producing districts the leaves are sometimes sorted prior to cutting, roughly in accordance with their position on the plant. This is not general, however, and well over half of the production is prepared in shredded form without any previous grading. When shredded it can be graded only in accordance with color, freeness from insect damage, and general cleanliness. There are no recognized standards of the product, and tobacco from several producers growing the same type of leaf will vary in accordance with methods followed in preparation.

##### Krossok

Krossok is in general carefully graded by the estate companies and middlemen, who ferment and pack it for market. Grade standards vary as between different handlers as well as between different types of leaf; however, fundamental practices by which grades are determined are relatively uniform. Variations in standards for a particular type of tobacco result largely from the

degree of precision followed, which is often determined by the use for which it is intended. Some Krossok destined for use in domestic cigars and cigarettes may be roughly sorted into only a few grades determined by color and the position of the leaf on the plant. On the other hand, the grades of cigar types of Krossok grown by natives under the supervision of estate companies may be numerous. In this case careful consideration is given to thickness of the leaf, texture and color.

The factors taken into consideration in grading Krossok as well as estate leaf are as follows: (1) position on the plant: top, middle, and bottom; (2) thickness of leaf: usually two qualities, thick and thin; (3) texture; fine, medium, and coarse; and (4) color, (the number of color classes varies with types from only two in the case of certain cigarette and pipe-tobacco types to five or more for some cigar types).

The grading of Krossok is begun prior to fermentation. The hands of leaves are sorted largely in accordance with color, and off-colored leaves in individual hands are removed. Further sorting is made after fermentation. If carefully done, the hands are broken and each leaf examined in accordance with the above characteristics 1 to 4, the leaves of different grades being retied into hands. Less-careful grading consists in a reexamining of the hands and their being sorted into grades for which the requirements fit most of the leaves in the hand. Leaves that are strikingly off-grade are removed from the hand.

After fermentation and grading have been completed, the tobacco is packed in bales of approximately 220 pounds that are wrapped with straw matting. The bale is labeled with the name of the company that packed it, the type of leaf contained, and the grade designation.

#### Estate Leaf

The grading of estate tobacco begins in the field. Tobacco from fields which, because of their soil properties, are known to produce a particular type of leaf, is brought together for fermentation and grading. Priming and curing of the crop are so regulated that sorting in accordance with the position of the leaf on the plant is made as the leaves go into curing barns.

Each leaf is examined prior to stringing, and injured leaves are segregated and cured separately. When cured they are tied in hands containing leaves of relatively uniform quality, and after fermentation the hands are broken and each leaf is again examined separately and classified in accordance with thickness of leaf, texture, and color (see figure 9). This work is done by carefully trained graders, who work under the constant supervision of foremen, who, in turn, have had many years' experience in grading. In the case of the better cigar types, each of the three main grades determined by position on the plant is subdivided into as many as 15 or more subgrades.

When grading is completed, the leaves are again tied in hands and carefully packed in bales of about 182 pounds in the case of Sumatra and Vorstenlanden leaf, and approximately 220 pounds in the case of other estate tobacco. The bales are wrapped in a special type of straw matting. Labels on each bale show the estate company which grew the leaf, the estate on which it was grown, and the exact grade.

Figure 9. - Grading of Sumatra wrapper leaf after it has been fermented.



Figure 10. - Buyers from all over the world examine samples of Netherland Indies leaf on the Amsterdam inscription auction markets.  
(Courtesy A.B.C. Press Service, Amsterdam.)

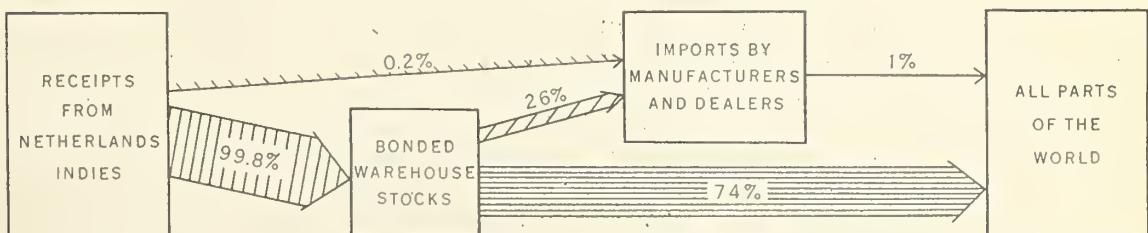


Figure 11. - Disposition of Netherlands Indies tobacco in the Netherlands.

### Java Flue-cured

Leaf from American flue-cured seed grown in Java is graded somewhat in accordance with American standards. As yet the portion of the crop that is actually flue-cured is largely limited to lugs and leaf grades. After flue-curing, these two main grades are each sorted into four subgrades primarily in accordance with color and soundness of leaf. Most of the crop that is air- and sun-cured is sorted into six grades, primarily in accordance with color, size, and soundness of leaf.

Grading of the portion of the crop that is flue-cured is done entirely by buying agencies. Most of the crop that is air- and sun-cured is also graded by the buying agency. Grading by native farmers is very limited.

### Marketing

#### Kerf Tobacco

Native Kerf tobacco that enters commercial channels is sold by farmers to small Chinese or native dealers, who in turn resell it to larger dealers, to the manufacturers of strootjes, cigarettes, and cigars, or to exporters. There are no established markets, and purchases by dealers from producers are usually made at the farm or the buyer's warehouse. The portion of production not sold to dealers moves direct from producers to consumers. It is frequently sold at village markets along with vegetables and other produce and in some cases is bartered to natives in exchange for other native products.

#### Krossok

Practically all of the Krossok is purchased by relatively large dealers or estate companies who ferment and grade it. Resales of such leaf for domestic consumption are made to manufacturers of cigarettes, cheap cigars and shag. Shipments to the Netherlands account for practically all of the exports of such leaf. It is received there by brokers that represent the Netherlands Indies firms and is sold on the Amsterdam and Rotterdam auctions.

#### Estate Leaf

Most of the estate companies ship their entire production of leaf to the Netherlands soon after it is fermented and packed. This practice was started when the production of estate leaf began, and markets in the Netherlands have continued to be the only place where such leaf can be purchased in volume. One reason for the practice is the unsatisfactory storage conditions in the Netherlands Indies. Leaf held there is subject to damage from high humidity combined with high temperature, and from weevil. Such damages are negligible in the temperate climate of the Netherlands. A further reason for sales in the Netherlands is that practically the entire production is purchased by European buyers and the leaf is brought to them rather than requiring them to go to the Netherlands Indies.

Table 6.—Sales and prices obtained for specified Netherlands Indies tobacco in the Netherlands, 1932 to 1937

Type of Tobacco	1932	1933	1934	1935	1936	1937
SALES	1,000 pounds					
Sumatra.....	25,616	24,294	24,136	23,841	25,784	27,268
Java:						
Vorstenlanden.....	22,274	20,453	22,104	19,864	18,887	20,580
Besoeki.....	30,454	33,215	36,807	38,127	39,608	43,027
Loemadjang.....	7,496	9,259	9,259	8,157	8,818	11,243
Kediri and Rembang:	8,377	9,259	9,259	5,732	10,141	9,039
Kedoe.....	2,205	3,086	1,102	750	794	926
Banjoemas.....	1,698	1,984	2,425	1,323	1,323	2,028
Other.....	220	1,389	551	265	44	29
Total Java.....	72,724	78,645	81,507	74,218	79,615	86,872
Madura.....	639	838	882	992	904	794
Total.....	98,979	103,777	106,525	99,051	106,303	114,934
PRICE PER POUND	United States: Land cents					
Sumatra.....	111.1	144.5	124.3	61.6	111.1	73.0
Java						
Vorstenlanden.....	30.8	12.3	23.6	11.7	19.1	12.6
Besoeki.....	20.6	8.2	18.1	9.0	15.6	10.3
Loemadjang.....	16.3	6.5	19.1	9.5	13.6	8.9
Kediri and Rembang:	7.7	3.1	8.4	4.2	6.4	4.2
Kedoe.....	10.9	4.4	10.0	5.0	9.1	6.0
Banjoemas.....	19.1	7.6	19.1	9.5	11.8	7.8
Other Java.....	10.9	4.4	11.8	5.9	8.2	5.4
Madura.....	15.4	6.2	15.4	7.6	12.7	8.3

Compiled from data published in "Statistisch Overzicht Van Sumatra en Java Tabak" by Dentz and Van Der Breggen, Amsterdam.

Great care is taken in loading the estate leaf in boats for shipment to the Netherlands. It is put only in well-ventilated holds and the bales are never ricketed to a height of more than six bales. This prevents damage from overheating and also prevents leaves in the bottom bales from being broken by excessive weight. As a further protection against breakage of leaves, the bales are always ricketed directly on top of each other rather than allowing them to overlap, which is the usual practice in loading cargo.

Shipments of estate leaf to the Netherlands are received by brokers who represent the different estate companies. They offer the leaf, on the basis of samples, on the Amsterdam and Rotterdam auctions, where it is purchased largely by cigar manufacturers and leaf dealers (see figure 10). Approximately 85 percent of Sumatra wrapper leaf and about 70 percent of Java and Madura estate leaf is reexported from the Netherlands (see figure 11).

Table 7.- Sales in the Netherlands of Sumatra, Java, and Madura tobacco, quantities retained for domestic use and quantities reexported, 1931 to 1938

Type and Year	Total sales	Retained for domestic use		Sold for export	
		Bales	Bales	Percent	Bales
<u>Sumatra tobacco a/</u>					
1931.....	214,603	31,326	14.6	183,277	85.4
1932.....	183,193	27,497	15.0	155,696	85.0
1933.....	168,743	24,846	14.7	143,897	85.3
1934.....	173,513	22,988	13.2	150,525	86.8
1935.....	135,000	20,800	15.4	114,200	84.6
1936.....	135,213	18,000	13.3	117,213	86.7
1937.....	128,650	14,800	11.5	113,850	88.5
1938.....	134,050	16,300	12.1	117,750	87.9
Java and Madura b/					
1931.....	379,676	102,687	27.0	276,989	73.0
1932.....	453,994	132,048	29.1	321,946	70.9
1933.....	422,063	122,947	29.1	299,116	70.9
1934.....	418,685	102,935	24.6	315,750	75.4
1935.....	394,774	105,312	26.7	289,462	73.3
1936.....	388,097	116,796	30.1	271,301	69.9
1937.....	365,096	107,096	29.3	258,000	70.7
1938.....	358,479	100,128	27.9	258,351	72.1

Compiled from data published in "Statistisch Overzicht Van Sumatra en Java Tabak" by Dentz and Van Der Breggen, Amsterdam.

a/ Bales averaging about 220 pounds.

b/ Partly of bales averaging about 220 pounds and others averaging about 182 pounds.

#### Java Flue-cured

Most of the Java flue-cured leaf is purchased from farmers by the companies that have been instrumental in expanding its production. When seedlings are sold to natives by a company the grower obtains a bond or contract which guarantees that the company will purchase his leaf. When the crop was first introduced, the bond or contract, given by the single company that was interested in the crop, specified prices at which the company would purchase leaf of particular grades.

This guaranty is no longer carried in the customary contract. In practice the contract now merely serves to insure the native a market for his leaf. It also serves as an identification, which he must present in order that the issuing company may know that the leaf was from seedlings it sold to the native.

The usual contract does not require the grower to sell his leaf to the individual or agency from whom he secured seedlings, and prior to 1938 small concerns were purchasing increasing quantities of flue-cured leaf grown from seedlings furnished by the larger companies. This practice was objected to by the larger companies and as a result of their complaints the Netherlands Indies Government in 1938 issued an ordinance that stopped it and in effect binds the grower to sell his leaf to the individual or agency from which he obtained seedlings. The ordinance requires that all buyers of flue-cured leaf in the Bodjonegoro district have a government permit or buying license. Licenses are issued only to individuals or agencies who have furnished farmers with flue-cured seedlings, and the license specifies that the holder may purchase flue-cured leaf only from farmers to whom they furnished seedlings.

As yet practically the entire supply of Java flue-cured leaf has been used in the domestic manufacture of cigarettes. Exports have been limited to samples shipped to the Netherlands.

#### IMPORTS AND EXPORTS OF LEAF TOBACCO AND TOBACCO PRODUCTS

The Netherlands Indies has for many years been second to the United States as an exporter of leaf tobacco. The exports have been approximately one-third of the volume sent abroad from the United States and in most recent years well above exports from Greece, the world's third largest exporting country. Leaf imports into the Netherlands Indies have always been small but at times have exceeded the imports of Japan and certain European countries. The islands' export trade in tobacco products has always been insignificant, but prior to sharp increased duties in 1932 and 1934, imports of products were relatively large.

##### Exports

Since 1909 combined exports of leaf tobacco and tobacco products from the Netherlands Indies (with the exception of the last 2 World War years when shipment to Europe was difficult) have ranged between 99,000,000 and 302,000,000 pounds annually. There have been only 3 years, however, when exports exceeded 200,000,000 pounds. One of them was the year preceding the above-mentioned period when exports were low as a result of the war, and another was the second year following the war. Since 1925, the last year in which exports exceeded 200,000,000 pounds, the trend has been downward and for the 5 years 1934 to 1938 they averaged only about 106,000,000 pounds annually. Leaf exports have always accounted for nearly 100 percent of total tobacco exports. Exports of tobacco products, largely cut tobacco, have seldom exceeded 3,000,000 pounds annually and, during the 5 years ended with 1938, averaged about 703,000 pounds annually.

Approximately 90 percent of the leaf exported goes to the Netherlands where most of it is sold for reexport (nearly 80 percent during recent years). Most of the remaining 10 percent is sent to other European countries. Shipment to the Straits Settlements and Egypt have at times been important but most of such leaf is apparently for reexport to Europe. Exports direct to the United States have been insignificant except during the last 2 World War years and the 3 years immediately following.

Table 8.- Exports of leaf, Krossok, and Kerf tobacco, 1920 to 1938

Leaf and Krossok										Kerf tobacco			
Calendar	year	Leaf and Krossok from estates a/	Java	Sumatra	Vorsten-	Other	Native	Krossok	Java	All	other	Total	
		leaf	landen	Java	Krossok	Krossok	and	leaf	leaf	areas			
		1,000	1,000	1,000	1,000	1,000	and	1,000	1,000	areas	1,000	1,000	
		: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	: pounds	
1920....		45,313	51,828	b/	c/175,345	d/		272,486	439	1,578	2,017		
1921....		31,178	16,360	b/	12,983	39,729	100,250	183	1,451	1,634			
1922....		33,479	34,608	b/	15,860	29,129	113,076	315	1,440	1,755			
1923....		32,791	29,480	b/	17,937	35,527	115,735	293	1,358	1,651			
1924....		39,861	37,432	b/	20,833	53,356	151,482	214	1,349	1,563			
1925....		36,969	25,516	b/	25,913	113,605	202,003	212	1,281	1,493			
1926....		33,483	24,447	7,286	24,837	72,675	162,728	307	1,177	1,484			
1927....		47,747	22,690	9,888	20,642	71,854	172,821	271	584	855			
1928....		38,451	22,771	10,591	20,154	62,143	154,110	201	1,091	1,292			
1929....		37,458	21,503	10,124	20,598	71,559	161,242	201	1,146	1,347			
1930....		39,978	26,252	10,529	18,036	76,714	171,509	287	1,082	1,369			
1931....		38,223	24,083	15,889	21,645	78,722	178,562	192	974	1,166			
1932....		32,390	23,219	17,191	15,232	75,571	163,603	88	549	637			
1933....		20,831	21,823	10,157	5,628	49,306	107,745	57	452	509			
1934....		24,500	20,002	8,278	12,806	32,353	97,939	57	472	529			
1935....		22,070	21,513	6,080	22,125	36,698	108,486	64	534	598			
1936....		25,276	19,425	5,699	19,442	36,684	106,526	73	558	631			
1937....		26,226	18,426	7,158	23,194	32,452	107,456	132	587	719			
1938....		25,649	20,121	7,423:c/	54,589	d/	107,782	113	579	692			

Compiled from data furnished by Agricultural Statistics Section of Central Bureau of Statistics of the Netherlands Indies.

a/ Includes tobacco purchased from natives and handled by estates. b/ Included with Vorstenlanden. c/ Includes native Krossok. d/ Included with estate Krossok.

Cigarette exports have seldom exceeded 100,000 pounds annually, and for more than half of the years since 1909 they have been less than 25,000 pounds. Exports to the Netherlands and the Straits Settlements have accounted for most of the total. Cigar exports have also been insignificant. There have been only 2 years since 1909 when the annual export exceeded 100,000 pounds. For half of the years in that period they were below 25,000 pounds annually.

Exports of cut tobacco (primarily Kerf) since 1909 has ranged between 508,000 and 3,595,000 pounds. The trend during the entire period has been decidedly downward and for the 5 years 1934 to 1938 such exports averaged approximately 630,000 pounds annually. Shipments have been almost entirely to the Straits Settlements, where the product is consumed by natives.

### Imports

Combined imports of leaf tobacco and tobacco products since 1909 have ranged between 6,967,000 and 34,749,000 pounds annually. The trend was upward until 1929 but has been downward since that year. Combined imports for the 5 years ended with 1938 have averaged only about 10,200,000 pounds annually. The sharp decline in recent years has resulted primarily from high import duties and regulations requiring that machine-made cigarettes manufactured in the islands contain a high percentage of domestic leaf (60 percent during recent years).

From 1909 to 1912, leaf imports ranged between 3,000,000 to 5,000,000 pounds annually, but declined sharply for the 10 years 1913 to 1922 when they averaged only 455,100 pounds annually. The decrease resulted from the demand for cigarettes being more nearly supplied by cigarette imports and from the importation of cut tobacco for use in the domestic manufacture of cigarettes. From 1923 until 1929, leaf imports increased substantially with the larger cigarette demand. Since 1929 they have declined sharply as a result of higher import duties and also during the past few years, because of regulations requiring the use of a higher percentage of domestic leaf in cigarettes manufactured.

American flue-cured leaf has for many years comprised the bulk of leaf imports. Until 1925 most of such imports were by transhipments through the Straits Settlements, China, Hong Kong, and the Philippines. Beginning with 1926 direct imports from the United States have accounted for most of the total. Except for a few years when imports of Chinese flue-cured leaf were relatively large, leaf imports from sources other than the United States have been small.

Cigarette imports into the Netherlands Indies since 1909 have ranged between 185,000 pounds and 10,108,000 pounds annually. The trend was upward from 1909 to the peak year of 1923 but has been downward since that year. During the 5 years ended with 1938, imports averaged only 599,000 pounds annually. The sharp decline in the past 5 years can be largely attributed to higher import duties.

Imports of cigarettes from the United Kingdom and the British possessions of Egypt, Hong Kong, and the Straits Settlements account for most of the total. China has been a source of supply, but such imports have been relatively insignificant except during the period 1921 to 1928. The Netherlands have never been an important source of supply; during recent years imports from this source have ranged between 1,000 and 6,000 pounds annually. Since 1909, there has been only 1 year when cigarette imports from the United States exceeded 150,000 pounds. From 1934 to 1938 the average annual import from this country was only about 37,000 pounds.

Cigar imports have seldom exceeded 1,000,000 pounds annually and for the 5 years ended with 1938 averaged only 98,000 pounds annually. The Netherlands have been the primary source of supply, but substantial quantities from other countries have been imported through the Straits Settlements. Imports direct from the Philippines, though small, exceed those from any direct source other than the Netherlands. Imports direct from the United States have been practically nil.

For most of the years since 1909, imports of tobacco products other than cigars and cigarettes have exceeded the combined imports of leaf, cigarettes, and cigars. They have ranged between 3,300,000 and 11,000,000 pounds and there has been no pronounced trend. A substantial part of the import is tobacco, primarily American flue-cured, cut ready for use in the manufacture of cigarettes. This practice is followed as a result of the humid climate of the Netherland Indies. Leaf held in storage or even handled in the islands loses its color, and cigarette manufacturers have adopted the practice of importing cut leaf in moisture-proof paper bags. It is used in cigarettes immediately or within a few weeks after its arrival.

The United Kingdom and the Netherlands have been the primary source of cut tobacco imports. Imports from China and Hong Kong, which are largely Chinese pipe tobacco for use by the Chinese population, are next in importance to imports from the Netherlands and the United Kingdom. Imports direct from the United States have seldom exceeded 40,000 pounds annually and for the 5 years 1934 to 1938 they averaged only 11,000 pounds. Until recent years imports from the United Kingdom were largely transhipped from the Straits Settlements and were therefore reported from that source.

Table 9.— Exports and imports of leaf tobacco and tobacco products from the Netherlands Indies and excess of combined exports over combined imports, 1909 to 1938 <sup>a</sup>

Year	Exports					Imports					Excess of exports over imports		
	Leaf tobacco:	Cigarettes:	Cigars:	Cut tobacco:	Total:	Leaf tobacco:	Cigarettes:	Cigars:	Others:	Total:	pounds:	pounds:	pounds:
	1,000 pounds:	1,000 pounds:	1,000 pounds:										
1909	131,061:	72	b/	c/	131,133:	2,981:	185:	549:	3,252:	6,967:	124,166		
1910	138,571:	47	5	c/	138,623:	5,030:	332:	737:	4,883:	10,982:	127,641		
1911	163,264:	26	5	c/	163,295:	3,556:	470:	773:	5,281:	10,080:	153,215		
1912	182,897:	7	8	3,362:	186,274:	3,545:	619:	870:	5,551:	10,585:	175,689		
1913	190,533:	9	7	3,099:	193,648:	507:	906:	1,031:	9,258:	11,702:	181,946		
1914	145,279:	19	10	2,895:	148,203:	542:	1,055:	1,013:	9,345:	11,955:	136,248		
1915	181,748:	9	17	2,640:	184,414:	452:	1,409:	890:	8,489:	11,240:	173,174		
1916	204,465:	5	27	3,595:	208,092:	542:	1,745:	874:	7,943:	11,104:	196,988		
1917	25,868:	5	b/	2,476:	28,349:	451:	2,548:	634:	5,647:	9,280:	19,069		
1918	15,396:	24	c/	1,850:	17,770:	348:	3,406:	628:	3,896:	3,278:	9,492		
1919	299,133:	33	89	2,456:	301,711:	279:	4,764:	779:	4,103:	9,925:	291,736		
1920	274,398:	64	212	2,016:	276,690:	322:	6,237:	689:	5,507:	12,755:	263,935		
1921	100,250:	19	117	1,633:	102,019:	491:	9,720:	647:	7,339:	18,197:	83,822		
1922	113,076:	17	15	1,755:	114,863:	617:	9,190:	536:	7,255:	17,598:	97,265		
1923	115,736:	25	b/	1,651:	117,412:	1,174:	10,108:	481:	7,279:	19,042:	98,370		
1924	151,744:	25	b/	1,564:	153,333:	2,763:	9,942:	476:	7,085:	20,266:	133,067		
1925	202,646:	14	b/	1,494:	204,154:	6,148:	8,181:	573:	9,072:	23,974:	180,180		
1926	162,729:	103	82	1,482:	164,396:	12,592:	7,077:	1,008:	10,994:	31,671:	132,725		
1927	169,563:	519	101	1,297:	171,480:	16,849:	5,901:	1,107:	10,892:	34,749:	136,731		
1928	154,128:	222	43	1,292:	155,685:	11,376:	3,438:	534:	9,335:	24,683:	131,002		
1929	161,289:	52	90	1,349:	162,780:	17,464:	3,559:	595:	9,548:	31,166:	131,614		
1930	171,582:	83	86	1,368:	173,119:	13,782:	3,091:	503:	8,233:	25,609:	147,510		
1931	178,565:	27	23	1,164:	179,779:	7,869:	2,330:	329:	5,632:	16,160:	163,619		
1932	163,605:	20	20	637:	164,282:	10,656:	971:	214:	3,650:	15,491:	148,791		
1933	107,748:	13	13	508:	108,282:	5,549:	345:	70:	5,519:	11,483:	96,799		
1934	97,935:	201	26	529:	98,691:	3,161:	425:	78:	7,901:	11,565:	87,126		
1935	108,486:	30	17	598:	109,131:	1,444:	370:	75:	6,522:	8,411:	100,720		
1936	106,525:	11	16	632:	107,184:	1,670:	410:	87:	5,294:	7,461:	99,723		
1937	107,458:	19	11	710:	108,198:	3,265:	671:	125:	3,133:	12,194:	96,004		
1938	d/ 107,732:	17	7	692:	108,498:	3,433:	1,117:	126:	6,584:	11,260:	97,238		

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

a/ See accompanying appendixes I and II for details by destinations and sources. b/ Included with cigarettes. c/ Not separately reported. d/ Apparently included with leaf tobacco.

Included with cigarettes. d/ Prelim.

### Import and Export Duties

Duties on leaf tobacco and tobacco products imported into the Netherlands Indies have never been as high as those of many countries; however, duty increases in recent years have tended to restrict imports to minimum requirements of special-quality leaf and high-grade tobacco products.

Import duties on leaf tobacco and tobacco products other than cigarettes and cigars were first imposed in 1866. The rate including surtax was low, 8 guilders per 100 kilograms (about 2 cents per pound at the 1938 exchange). This was not changed until 1924, but beginning with that year there has been a series of increases. The last increase was in January 1934, when the rate including surtax for cut tobacco, processed stems and snuff, was raised to 27 guilders per 100 kilograms (about 8.05 cents per pound at the 1938 exchange). The duty including surtax on leaf was left at 18 guilders per 100 kilograms (about 4.5 cents per pound at the 1938 exchange).

Import duties on cigarettes and cigars were first made in 1886. They were not changed until 1921, but were increased progressively from then until 1932, when the rate, including surtax, was made 225 guilders per 100 kilograms (about 56 cents per pound at the 1938 exchange). The last change was on February 1, 1936, when the rate was lowered to 150 guilders per 100 kilograms (about 37 cents per pound at the 1938 exchange). The decrease was made as a result of an increase in internal tax from 20 to 30 percent of value.

The following tabulation gives import duties including surtaxes on leaf tobacco and tobacco products and dates they became effective.

<u>Effective Date</u>	<u>Netherland guilders</u> <u>per 100 kilos</u>	<u>United States</u> <u>cents per pound</u> <sup>a/</sup>
<u>Leaf tobacco and products other than cigars and cigarettes</u>		
1866.....	8.00	-
1924...(September 3).....	12.00	2.04
1931...(January 1).....	13.20	2.39
1932...(January 1).....	14.40	2.61
1932...(June 15).....	18.00	3.27
1934 <sup>b/</sup> (January 10).....	27.00	8.02
<u>Cigars and cigarettes</u>		
1886.....	50.00	-
1921...(May 18).....	100.00	16.8
1924...(June 6).....	150.00	25.5
1931...(January 1).....	165.00	29.9
1932...(January 1).....	180.00	32.6
1932...(June 15).....	225.00	40.8
1936...(February 1).....	150.00	40.7

Compiled from data furnished by the Treasury Office of the Netherlands Indies.

<sup>a/</sup> Converted to United States cents per pound at prevailing rate during year in which duties became effective.

<sup>b/</sup> Rate applies only to cut tobacco, processed stems, snuff, and other tobacco products excepting cigars and cigarettes. Leaf, unprocessed stems, and strips were left unchanged at 18 guilders per 100 kilograms.

An export duty on leaf and certain tobacco products has been in existence in the Netherlands Indies since 1866. The original duty, which has not been changed, applies only to leaf tobacco and cut tobacco other than Kerf, all other products, including Kerf, have been free of the duty. The rate has been low, only 1.00 guilder per 100 kilograms (0.2 cent per pound at the 1938 exchange) and was originally made for fiscal reasons. At the time it was imposed the Netherlands Administration in the islands had difficulty in levying direct internal taxes, and resorted to export and import duties to meet the cost of government. In more recent years internal taxes have become possible and the export duty has been removed on certain types of leaf during periods when prices for the leaf have been low or at times when they have been subject to direct internal taxes.

Java and Sumatra estate tobacco and Krossok handled by estate companies from the crops of 1919 to 1922 was exempt from the export duty as a result of the leaf being subject to an internal tax during the period.

In January 1935, as a result of low prices, the export duty was removed for all tobacco originating in Java and Madura; however, the regulations provided that they might be renewed on July 1, 1938. Prior to this date, the duty exemption on all Java and Madura leaf except Vorstenlanden leaf was extended until July 1, 1939, and has subsequently been extended until July 1, 1940.

In addition to the tobacco export duty, there has been, since February 24, 1938, a national defense export duty equivalent to 1 percent ad valorem on practically all goods leaving the islands. Exemption from the duty is extended to certain agricultural products and other raw materials only during periods of unusually low prices. The application of this duty to leaf tobacco other than Sumatra wrapper leaf and Vorstenlanden leaf was removed on February 12, 1939.

#### MANUFACTURE AND CONSUMPTION OF TOBACCO PRODUCTS

Consumption of tobacco in the Netherlands Indies during the 5 years 1934 to 1938 averaged approximately 146,000,000 pounds (processing order 1/1) annually. Of this amount, approximately 136,000,000 pounds were supplied from domestic tobacco, about 6,500,000 pounds from the import of leaf and cut tobacco primarily for use in cigarettes, and 3,500,000 pounds from imports of tobacco products other than cut tobacco.

The percentage of total consumption represented by different products during the 5 years, 1934 to 1938, was approximately as follows:

Kerf (used as such).....	68.5
Domestic shag and imported cut tobacco (used as such) ..	3.0
Cigars.....	6.5
Strootjes.....	7.0
Hand-made cigarettes... ..	5.0
Machine-made cigarettes.....	10.0
Total.....	100.0

Snuff is also used in small quantities, but its percentage in terms of total tobacco used is of no significance.

1/ Condition of the tobacco at the time it is used in manufacture.

Table 10.—Approximate quantities of tobacco (processing order) used in the manufacture of tobacco products in the Netherlands Indies, 1933 to 1938

Kind of tobacco	1933	1934	1935	1936	1937	1938	5-yr. average 1934 to 1938
	<u>1,000 lb.</u>						
<u>Machine-made cigarettes</u>							
Imported Leaf	6,834	3,307	1,323	1,102	2,205	2,425	2,072
Imported cut tobacco	3,307	4,850	5,512	2,646	3,748	3,527	4,057
Domestic <u>Krossok</u>	6,444	5,086	5,764	7,218	6,821	7,080	6,394
Domestic flue-cured	170	425	850	1,600	3,100	2,400	1,675
Total	16,755	13,668	13,449	12,566	15,874	15,432	14,198
<u>Hand-made cigarettes</u>							
Imported Leaf	2/	2/	110	220	441	441	242
Domestic <u>Krossok</u>	331	331	882	1,553	2,566	3,789	1,824
Domestic flue-cured	2/	2/	2/	100	300	400	160
Domestic Kerf	1,213	1,213	3,197	5,181	5,952	8,818	4,873
Total	1,544	1,544	4,189	7,054	9,259	13,448	7,099
<u>Strootjes</u>							
Domestic Kerf	7,055	8,818	8,593	9,259	11,905	12,346	10,185
<u>Cigars</u>							
Imported Leaf	110	110	88	88	88	88	93
Domestic leaf and <u>Krossok</u>	4,078	4,298	5,952	7,164	8,598	7,164	6,635
Domestic Kerf	1,543	1,543	1,984	2,646	3,307	2,646	2,425
Total	5,731	5,951	8,024	9,898	11,993	9,898	9,153
<u>Cut tobacco (shag)</u>							
Imported Leaf	55	55	55	110	110	110	88
Domestic <u>Krossok</u>	661	661	1,102	1,984	1,984	2,205	1,587
Total	716	716	1,157	2,094	2,094	2,315	1,675
<u>Other products b/</u>							
Domestic Kerf	104,842	100,386	127,352	99,691	76,713	96,453	100,120
Total all products							
Imported Leaf	6,999	3,472	1,576	1,520	2,844	3,064	2,495
Imported cut tobacco	3,307	4,850	5,512	2,646	3,748	3,527	4,057
Domestic leaf and <u>Krossok</u>	11,514	10,376	13,700	17,919	19,969	20,238	16,440
Domestic flue-cured	170	425	850	1,700	3,400	2,800	1,835
Domestic Kerf	114,653	111,960	141,131	116,777	97,382	120,263	117,603
Total	126,643	121,083	162,769	140,562	127,843	149,892	142,430

Compiled from data furnished by Department of Economic Affairs of the Netherlands Indies.

b/ Less than 500 pounds.

b/ Largely native Kerf used as such for chewing tobacco or in "roll-your own" strootjes and cigarettes.

### Kerf

The consumption of Kerf, used directly as such, in recent years is approximated at about 100,000,000 pounds annually. As has been previously explained, it is prepared by natives during the curing process and is ready for consumption immediately after curing or after aging. All types of native leaf are converted into Kerf, but there is seldom any blending or mixing of different types. Consumption in a particular locality is usually confined to Kerf prepared from leaf grown in the section; however, the west coast of Sumatra, middle and east Java, Madura, Celebes, Bali, and Sombok are surplus producing districts, from which shipments are made throughout the islands.

Sales to consumers are made largely through native markets and shops where the tobacco is sold along with vegetables and other native products. There are but few standard packages or brands. It is usually retailed unpackaged in quantities ranging from a few ounces to several pounds. Except for small portions of the better quality sold by recognized commercial houses in standard containers and under trade names, it is not taxed and prices to consumers are usually low. They are highest in nonproducing districts where distribution from surplus areas is made through Chinese and native dealers. In surplus and self-sufficient areas where the product moves direct from producer to retailer or consumer, prices to consumers are not greatly in excess of leaf prices.

The product is used in roll-your-own cigarettes, and as chewing tobacco. In the former case, which is most extensive, corn husks or tree leaves are commonly substituted for cigarette paper.

### Domestic Shag and Imported Cut Tobacco

During the 5 years, 1934 to 1938, consumption of domestic shag and imported cut tobacco amounted to approximately 4,500,000 pounds annually. Of this amount, about 1,700,000 pounds were represented by domestic shag and 2,800,000 pounds by imports of brands of cut tobacco commonly sold in Europe.

The imported product, as a result of the relatively high import duty and an internal tax, which was 20 percent of retail value until February 1, 1936, and 30 percent after that date, sells at relatively high prices. It is only used by Europeans and the well-to-do natives in roll-your-own cigarettes and for pipe smoking.

Domestic shag is subject to the internal tax but, as it is produced by domestic manufacturers and largely from domestic leaf, it sells for materially lower prices. It is used almost entirely in roll-your own cigarettes.

### Cigars

The manufacture and consumption of cigars in the Netherlands Indies is small despite the fact that the islands rank among the important cigar-leaf-tobacco producing countries. This is due to the fact that most of the cigar type leaf grown is high in price and quality.

Most of the cigars sold in the islands are of domestic origin and are made from tobacco that is below export quality. More than half of the production is

from low-grade Krossok used as filler and similar quality or low-grade estate leaf used as binder and wrapper. In the other portion of production Kerf is used as filler, paper of the brown cigarette type as binder, and a low grade estate leaf or Krossok as wrapper. The domestic products are chiefly small sized cigars that sell in competition with cheap cigarettes and strootjes. During recent years approximately 9,000,000 pounds annually of domestic leaf and Kerf have been used in the local manufacture of cigars.

Consumption of imported cigars, which are used largely by the European population, amounted to only about 98,000 pounds annually during the 5 years, 1934 to 1938.

The native cigars are all hand-made. There are a few relatively large establishments and many small concerns that manufacture for sale through wholesale or retail establishments. In addition there are a number of individual cigar makers who sell their output direct to retailers or consumers.

Since 1933, all cigars sold in the country have been subject to an excise tax equivalent to 20 percent of the retail value. Retail prices for domestic products, however, are extremely low. In 1938 over two-thirds of total sales (both domestic and imported cigars) sold for less than 5 cents per package of 4 or more cigars, and over half sold for about 0.5 cent or less per package. (see table 11).

#### Strootjes

Strootjes are a domestic product made from native Kerf rolled in corn husks. Many of the brands also contain a mixture of sugar, cloves, and certain other spices. Tobacco used in their production for retail sales during the 5 years 1934 to 1938 averaged approximately 10,000,000 pounds annually.

The commercial production of strootjes is entirely by hand but most of them are made in relatively large Chinese and native establishments that employ makers on a piece basis. The product has about the same length as a cigarette but is somewhat cone-shaped, rather than cylindrical and does not contain as much tobacco as the average cigarette. Most of them are packed for retail sale in paper packs containing 4 to 10 pieces. When commercially produced they are subject to an excise tax of 20 percent of retail value and sell at an average of about \$1.10 per thousand pieces. Distribution is through wholesalers, who handle them along with cigarettes and other products sold to small retail shops, or by retail direct by producer to consumer.

#### Cigarettes

##### Leaf Used

Tobacco used in cigarettes consumed in the Netherlands Indies during recent years exceeds the use in all other products except Kerf. Prior to import duty increases in 1932, imported cigarettes represented a substantial part of total consumption (approximately 20 percent for the 10 years 1923 to 1932) but during the 5 years 1934 to 1938 domestically made cigarettes accounted for most of the total. During this period, leaf used in domestic production averaged about 21,000,000 pounds annually, whereas cigarette imports average less than 600,000 pounds annually.

For the 5 years ending with 1938, the annual quantity of leaf used in domestic manufacture of cigarettes was approximately as follows:

	<u>1,000 pounds</u>	<u>Percentage of total</u>
Leaf imports (primarily American flue-cured)...	2,314	10.9
Cut tobacco imports (primarily American flue-cured).....	4,057	19.0
Domestic flue-cured.....	1,835	8.6
Domestic <u>Krossok</u> .....	8,218	38.6
Domestic <u>Kerf</u> .....	4,873	22.9
Total.....	21,297	100.0

Increases in domestic flue-cured leaf production during recent years, combined with Government regulations requiring machine-cigarette manufacturers to use a high percentage of domestic tobacco in cigarettes have resulted in decreased utilization of imported leaf and cut tobacco. The decrease, however, has been more than offset by an increase in use of domestic flue-cured, Krossok, and Kerf.

Total tobacco used in domestically made cigarettes increased from approximately 18,300,000 pounds in 1933 to 28,900,000 pounds in 1938, but during this period the use of imported leaf and cut tobacco declined from about 10,100,000 to 6,300,000 pounds annually. On the other hand, utilization of domestic flue-cured increased from about 170,000 to 2,800,000 pounds; domestic Krossok from 6,800,000 to 10,900,000; and domestic Kerf from 1,200,000 to 8,800,000 pounds annually.

#### Machine and Hand-rolled Production

Cigarette manufacture in the Netherlands Indies is carried on by both machine manufacturers and hand-roll operators. During the 5 years 1934 to 1938 machine manufacturers produced about 67 percent of total production and hand-rollers 33 percent. Hand-rolled production, which can be accomplished with less cost than machine manufacture has, however, gained on machine production. In 1933 hand-roll operators used only about 1,500,000 pounds of leaf (8.3 percent of total) as contrasted with approximately 16,700,000 pounds (91.7 percent of total) used by the machine manufacturers, whereas by 1938 leaf used by hand-roll operators had increased to approximately 13,400,000 pounds (46.5 percent of total) as compared with 15,400,000 pounds (53.5 percent of total) used by machine manufacturers.

The making of hand-rolled cigarettes began on a commercial scale about 30 years ago. In 1938 there were between 300 and 400 relatively large concerns engaged in this industry. In addition, there were several thousand independent individual makers or units employing only a few makers. Most of the larger concerns employed less than 100 operators but a few have over 2,000 persons engaged solely in rolling cigarettes. The cigarettes are rolled in small hand-operated contrivances that make a single cigarette at a time. The average operator can roll approximately 2,000 cigarettes per day. At this rate, the daily output of some of the larger companies is over 4,000,000 pieces.

These larger concerns have cutting machines and other equipment needed for making the tobacco ready for the cigarette. Some of them also have cigarette-making machines and are classified as both machine manufacturers and hand-roll producers. Part of the small units and individual makers have their leaf cut by a larger concern, but in most cases they use native Kerf that does not require processing.

The hand-roll operators cater exclusively to the low-priced-cigarette trade, and leaf used by them is largely domestic Krossok and Kerf. Cloves and other spices are also extensively used in this product. Machine manufacturers use large quantities of domestic Krossok but no Kerf. During the 5 years ended with 1938, their utilization of domestic Krossok represented about 45 percent of total utilization. The remaining 55 percent was largely imported or domestic grown flue-cured leaf.

#### Government Supervision of Machine Cigarette Manufacturing Companies

During recent years there have been about 14 or more machine-cigarette manufacturing companies operating in the Netherlands Indies, all having their factories in Java. Of this number, 4 produce almost the entire output of machine-made cigarettes and it is estimated that the largest of the 4 (British American Tobacco Company) produces over 75 percent of the total. The large number of companies in operation has resulted in what local authorities consider undue competition. In order to maintain their position, the older and larger, better-financed organizations have in the past undersold the smaller and in many cases newly established concerns. With a view to remedying this situation, the Governor General of the islands on September 1, 1935, extended by decree the "Industrial Regulation Ordinance of 1934" to include the machine-cigarette manufacturing industry. 1/ This decree empowered the Director of Economic Affairs of the islands to prescribe and carry out regulations designed to limit competition and to stabilize the cigarette industry. Regulations prescribed by the Director became effective on September 1, 1935, and since that date machine manufacturing companies have been under Government supervision.

The regulations assure each machine-cigarette manufacturing company a definite maximum sale of cigarettes during each quarter of the calendar year. The assurance is provided through the control of cigarette-tax stamps. Immediately preceding each quarter of the year the Director of Economic Affairs, after consultation with a committee representing the industry, fixes the expected consumption of cigarettes, expressed in terms of retail value, for the coming quarter. The forecast is based on current conditions, the value of cigarettes consumed during the previous quarter, and during the corresponding quarters of previous years. The total quota forecast for the quarter is prorated among the different manufacturers in accordance with their share, in terms of value, of total cigarettes sold prior to September 1, 1935.

The tax stamps show the retail price of the packages to which they are to be affixed, and vary in denominations from 1 to a 100 or more guilder cents.

1/ The ordinance of 1934 empowered the Governor General to impose regulations necessary for the stabilization of industry in the Netherlands Indies. Translation of decree pursuant to the ordinance that relates to the machine-cigarette manufacturing industry is attached hereto, Appendix III..

Each manufacturer is permitted to purchase stamps to cover his total allotment of sales in any combination of denominations he desires. Separate series showing different serial numbers are printed for each manufacturer and the stamps cannot be transferred from one manufacturer to another. Furthermore, unused stamps of a particular quarter cannot be used in subsequent quarters.

When the system was first put into force the regulations provided that a reissue of stamps within a quarter could be made only when most of the manufacturers exhausted their original allotment before the close of the quarter. The reissue in such cases was prorated among all manufacturers on the basis of the original issue for the quarter. This proved somewhat unsatisfactory as individual companies frequently exhausted their allotment before the end of the quarter and, when other companies were not in the same position, they were unable to secure stamps and could not supply the demand for their products. The frequency of such happenings resulted in the regulations being modified in October 1938 so that reissues of stamps could be made to individual companies even though competing companies had not exhausted their original supply.

In addition to the control of machine manufacturers through the quota system, the Director of Economic Affairs also has the authority to regulate minimum retail prices for different-sized cigarettes. After consultation with a committee representing the industry in 1935, the director fixed minimum retail prices for machine-made cigarettes having different cubic contents of tobacco. These prices are, however, subject to change with changes in the industry and consumer demand.

#### Tax Rates

The tax rate is the same on hand-made and machine-made cigarettes, and is collected through the sale of tax stamps. The charge for stamps of all denominations is a fixed percentage of the value appearing on the stamp, i.e., the retail price of the package to which the stamp is to be attached. When internal revenue taxes on tobacco products were put into effect (December 1932), the rate charged on cigarettes and all other products was 20 percent of retail value. On February 1, 1936, the rate on cigarettes and cut tobacco packed in the "European" manner (unpacked native Kerf not included) was increased to 30 percent of retail value, but that on other taxable products was left unchanged.

#### Distribution and Retail Prices

Some of the larger machine-cigarette-manufacturing firms maintain their own distributing organizations, which provide for the delivery of cigarettes from factories to retailers. They maintain depots in different localities, and representatives traveling from them make sales direct to retailers or to wholesalers that handle cigarettes along with other products. Most of the small machine-cigarette-manufacturing firms and the larger hand-roll concerns sell their output to wholesale houses that handle cigarettes along with other products. The small hand-roll establishments and individual hand operators sell their production direct to retailers or consumers.

The per-capita consumption of cigarettes in the islands is relatively low. In 1938 it was about 230 pieces per capita per year, which is comparable with consumption in China, much below that in Japan, and far below the per-capita

consumption in European countries and in the United States. Per-capita consumption is highest in Sumatra and certain islands where wages and incomes are higher than for the densely populated islands of Java and Madura. Total consumption, however, is greatest in Java and Madura. The following tabulation shows estimated consumption in 1937 and 1938 by principal areas as determined from total production and shipments from Java:

	<u>1937</u>		<u>1938</u>	
	<u>1,000 pounds</u> <u>of tobacco in</u> <u>cigarettes</u>	<u>Percentage</u> <u>of total</u>	<u>1,000 pounds</u> <u>of tobacco in</u> <u>cigarettes</u>	<u>Percentage</u> <u>of total</u>
Shipped to:				
Sumatra.....	8,053	32.1	8,480	29.4
Barneo.....	1,995	7.9	1,850	6.4
Celebes.....	2,484	9.9	2,316	8.0
Other islands.....	578	2.3	611	2.1
Retained in Java.....	<u>12,023</u>	<u>47.8</u>	<u>15,623</u>	<u>54.1</u>
Total.....	<u>25,133</u>	<u>100.0</u>	<u>28,880</u>	<u>100.0</u>

There are about 300 or more brands of cigarettes sold. The price range is wide but the average price for total sales is low. Tax returns in 1938 show that approximately 45 percent of total sales were retailed at prices below 1.5 cents per package. The cheaper hand-made products sell as low as \$1.10 per thousand and average about \$1.20 per thousand. Most of the machine-made product sells between \$1.40 and \$2.20 per thousand. It is estimated that sales at prices above \$2.20 per thousand account for less than 5 percent of total cigarettes sold.

Table 11.- Percentage of sales of each tobacco product, in terms of value, by price groups, and percentage each product of all products, 1933-1938

Product and year	Price per package a/				Percentage	
	: 0.01 guilder	: 0.015 to 0.03	: 0.035 to 0.10	: (0.55 United:guilder (0.83 :guilder (1.93 :All others	: individual	
	: States cent): to 1.66 United:to 5.52 United:	: All others			: products of	
	: States cents) :States cents) :				: all products	
	: Percent	: Percent	: Percent	: Percent	: Percent	: Percent
	Cigarettes					
<u>Cigarettes</u>						
1933.....	2.3	24.8	58.1	14.8	56.7	
1934.....	5.8	41.2	43.4	9.6	53.8	
1935.....	13.7	38.1	39.6	8.6	58.1	
1936.....	15.9	33.1	43.7	7.3	62.8	
1937.....	16.0	27.8	50.9	5.3	62.0	
1938.....	18.9	24.2	51.9	5.0	64.6	
<u>Strootjes</u>						
1933.....	52.9	20.0	26.4	.7	26.0	
1934.....	77.3	10.9	11.8	0	29.9	
1935.....	84.7	7.4	7.9	0	25.6	
1936.....	88.6	5.9	5.5	0	19.4	
1937.....	87.8	7.5	4.7	0	19.0	
1938.....	87.2	8.0	4.8	0	20.0	

--Continued

Table 11.- Percentage of sales of each tobacco product, in terms of value, by price groups, and percentage each product of all products, 1933-1938 - Continued

Product and year	Price per package a/					Percentage individual products of all products
	: 0.01 guilder	: 0.015 to 0.03	: 0.035 to 0.10	: All others	:	
	: (0.55 United	: guilder (0.83	: guilder (1.93	:	:	
	: States cent)	: to 1.66 United	: to 5.52 United	:	:	
	: States cents)	: States cents)	: States cents)	:	:	
<u>Cigars</u>	Percent	Percent	Percent	Percent	Percent	Percent
1933.....	22.9	11.3	12.8	53.0		7.8
1934.....	39.6	10.9	13.6	35.9		8.5
1935.....	46.3	7.2	10.2	36.3		8.0
1936.....	50.0	4.9	7.3	37.8		5.8
1937.....	51.7	4.4	7.3	36.6		5.0
1938.....	46.6	4.4	7.2	41.8		4.9
<u>Cut tobacco</u>						
1933.....	0.6	2.8	16.2	80.4		9.5
1934.....	0.7	3.3	24.7	71.3		7.8
1935.....	0.3	9.3	21.2	69.2		8.3
1936.....	1.1	14.9	25.4	58.6		12.0
1937.....	0.2	3.0	23.5	73.3		14.0
1938.....	0.1	4.8	28.9	66.2		10.5
<u>All products</u>						
1933.....	16.9	20.4	42.3	20.4		100.0
1934.....	29.7	26.6	29.9	13.8		100.0
1935.....	33.3	25.4	27.6	13.7		100.0
1936.....	30.1	24.0	32.0	13.9		100.0
1937.....	29.2	19.3	36.1	15.4		100.0
1938.....	31.9	18.0	37.9	12.2		100.0

Compiled from data published by the Bureau of Economic Affairs of the Netherlands Indies Government in "Economisch Weekblad," Batavia, Java.

a/ Size of packages for the different products is not uniform, and part of the shift from the higher-priced to the lower-priced groups results from a reduction in the size of packages. There are no sales at prices between 0.01 and 0.015 nor 0.03 and 0.035 guilder. United States values appearing in the heading have been converted at 55.2 United States cents per guilder, the prevailing rate in 1937 and 1938.

## PROBABLE DEVELOPMENTS AFFECTING AMERICAN TOBACCO FARMERS

It is expected that developments in the tobacco industry in the Netherlands Indies during the next several years will be somewhat unfavorable to American tobacco farmers; however, it is believed that they will not materially alter the present position of the United States in the world tobacco trade. Conditions that restrict the import of American tobacco into the islands are expected to continue and American producers may soon lose most of that market. There will be some further shift in leaf production in Java to the American-type flue-cured; although the product will be of low quality and can compete on foreign markets only with the lower grades of American flue-cured.

Tobacco production by the estate companies, which includes Sumatra wrapper leaf and the better Java cigar types, will probably be continued on a level that will enable the islands to furnish about the same portion of world export supply of cigar tobacco that they have in recent years. The policy of the agencies that control the output of these types will likely continue to be that of producing high-grade leaf in quantities that will yield maximum financial returns. There is no indication that they will attempt to expand their export through materially reduced prices. Lower prices could be obtained only by inaugurating changes in production and handling methods that would lower the quality of the leaf. Such action would jeopardize the position that the leaf, as a result of its excellent quality, now enjoys on world markets.

The trend in production of dark and semi-light air-cured types, which compete on European markets with certain American dark and light air-cured types is doubtful. There will probably be no direct effort, however, to regulate the supply of these types with a view to maintaining prices. American growers, therefore, may expect that their competition with them will continue about as it has in the past several years or will increase.

There is evidence that the production of American-type flue-cured in Java will increase sharply and that a substantial portion of the production will be available for export to Europe. It is probable that developments similar to those that have taken place in the Bodjonegoro district will occur in other areas that have been found suited to production of the type. The flue-cured acreage planted in 1938 in the Bodjonegoro district, where production began in 1928, was 17,000 acres. Under normal conditions, this acreage would have produced a crop of about 8,000,000 pounds. This amount would have been more than sufficient to replace the quantity of imported American flue-cured used in pipe mixtures and in medium- and low-priced cigarettes. In spite of the unfavorable weather conditions and resulting low yields experienced in the district in 1937 and 1938, it is expected that the acreage will continue to increase. With normal yields on increased acreage an export surplus would be immediately available.

Samples of American-type flue-cured leaf of recent Bodjonegoro crops sent to the Netherlands have been reported by European interests to be of a quality sufficiently high for use in cigarettes. Java flue-cured type, however, probably will never be of sufficient quality to be used as a substitute for average- or above-average-quality American flue-cured in either domestic consumption or on European markets. Basic factors such as soil and climate will prevent its becoming equal in quality to the American product. It is also probable that

production methods will continue such as to give low quality. Experimental trials by present estate companies have indicated that production costs and returns from growing the best quality flue-cured leaf obtainable would give smaller net returns than they can secure from types they now grow. It is not expected, therefore, that the present companies or similar organizations will undertake extensive production of the crop. Without the supervision of such organizations, quality will remain below that which might otherwise be obtained.

Flue-cured type tobacco produced in the Netherlands Indies will, for some time at least, be largely shade- or sun-cured. Flue-curing in the Bodjonegoro district is as yet limited to a relatively small portion of the production cured by local cigarette companies and dealers that are primarily interested in the crop. It is doubtful if flue-curing can be successfully carried on by natives. It would at best require some years before they could become proficient in the practice.

Domestic consumption of cigarettes and other commercial tobacco products in the islands is expected to increase moderately. Any pronounced increase would probably be met by higher taxes, which would check the rate of expansion. The trend to increased utilization of domestic tobacco, especially the flue-cured type, in the production of domestic products is expected to continue. The relatively high duties that have been in effect since 1934 favor this trend. It is also probable that the Government will require still further utilization of domestic tobacco.

Imports of tobacco of American origin, largely medium- to low-grade flue-cured, will be further replaced with domestic flue-cured. Our outlet in the islands will perhaps soon be limited to quantities needed in the production of better-grade cigarettes. Total requirements for this purpose will be limited, as the present outlook indicates that the portion of population with sufficient income to use better quality cigarettes will remain small.

Imports into the islands of tobacco products which are made largely from American leaf, will probably continue at about the low level of recent years or may decline. Present duties on products favors domestic production, and there is no indication of a duty reduction. Exports of tobacco products are expected to remain at the low level of recent years.

APPENDIX I

Imports of Leaf Tobacco and Tobacco Products by  
Sources, 1909 to 1938

Table 1. Netherlands Indies: Combined imports of leaf tobacco and tobacco products, by calendar years, 1909 to 1938

Compiled from accompanying tables 2 to 5.

<sup>2/</sup> Includes imports from Port Said when separately reported, and since 1935 imports from the Egyptian section of Sudan. <sup>b/</sup> Includes British Malaya. <sup>c/</sup> Includes not more than 22,000 pounds of tobacco products other than cigars and cigarettes that were imported from Hongkong. Such imports were not separately reported from Hongkong in 1912. <sup>d/</sup> A portion of total included with China. See footnote <sup>e/</sup>. <sup>e/</sup> Includes not more than 3,000 pounds of cigarettes that were imported from Hongkong in 1922. <sup>f/</sup> A portion of total included with China. See footnote <sup>g/</sup>. <sup>g/</sup> Includes shipments, if any, from the Netherland territory of Riouw to Java and Madura. <sup>h/</sup> Preliminary. <sup>i/</sup> Nil, or not separately reported and included with others.

Table 2.- Netherlands Indies: Imports of leaf tobacco, by calendar years, 1909 to 1933 a/

Year	United States	United Kingdom	Netherlands	Other lands	European countries	Straits	Egypt b/	Philipines	China	Hongkong	Japan	Others	Total
						1,000 pounds							
1909	0	0	0	0	0	0	0	0	1,797	37	1,025	114:	1,000 pounds
1910	0	0	0	0	0	0	0	0	55:	1,771	131:	8:	2,981
1911	0	0	0	0	0	0	0	0	82:	1,532	170:	4:	5,030
1912	0	0	0	0	0	0	0	0	147:	1,019:	97:	0:	3,556
1913	0	0	0	0	0	0	0	0	244:	124:	0:	0:	3,545
1914	0	0	0	0	0	0	0	0	289:	176:	6:	26:	507
1915	0	0	0	0	0	0	0	0	277:	86:	0:	0:	542
1916	0	0	0	0	0	0	0	0	232:	227:	0:	0:	452
1917	0	0	0	0	0	0	0	0	222:	222:	0:	0:	348
1918	5:	0	0	0	0	0	0	0	127:	189:	0:	24:	451
1919	0	0	0	0	0	0	0	0	128:	98:	0:	0:	33:
1920	6:	0	0	0	0	0	0	0	112:	81:	0:	0:	4:
1921	18:	0	0	0	0	0	0	0	164:	171:	0:	29:	3:
1922	61:	0	0	0	0	0	0	0	134:	95:	92:	116:	617:
1923	99:	0	0	0	0	0	0	0	141:	27:	522:	310:	18:
1924	353:	0	0	0	0	0	0	0	113:	54:	1,859:	99:	1,174
1925	2,557:	0	0	0	0	0	0	0	147:	37:	3,168:	26:	617:
1926	6,067:	0	0	0	0	0	0	0	122:	41:	6,153:	0:	491
1927	10,231:	0	0	0	0	0	0	0	123:	29:	6,162:	0:	38:
1928	10,618:	8:	0	0	0	0	0	0	117:	55:	26:	0:	34:
1929	16,472:	0	0	0	0	0	0	0	132:	37:	246:	15:	148
1930	12,387:	0:	0	0	0	0	0	0	97:	35:	706:	409:	12,592
1931	7,140:	0:	0	0	0	0	0	0	143:	21:	199:	161:	30:
1932	9,443:	0:	0	0	0	0	0	0	110:	3:	82:	12:	849
1933	4,193:	0	0	0	0	0	0	0	132:	1:	676:	0:	11,376
1934	2,592:	5:	0	0	0	0	0	0	126:	37:	625:	5:	17,464
1935	913:	49:	0	0	0	0	0	0	157:	7:	463:	0:	21:
1936	1,293:	24:	0	0	0	0	0	0	110:	1:	625:	5:	13,782
1937	2,559:	34:	0	0	0	0	0	0	124:	0:	79:	10:	57:
1938	2,853:	25:	0	0	0	0	0	0	78:	1:	221:	152:	0:
						49:	88:	8/:	98:	8/:	8/:	109:	5/:
													206:

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

a/ Net weight excluding all packing material. b/ Includes imports from Port Said when separately reported, and since 1935 imports from the Egyptian section of Sudan. c/ Includes British Malaya. d/ Less than 500 pounds.

e/ Includes shipments, if any, from the Netherland territory of Riouw to Java and Madura. f/ Preliminary.

g/ Nil, or not separately reported and included with others.

Table 3.- Netherlands Indies: Imports of cigarettes, by calendar years, 1909 to 1938 <sup>a/</sup>

Year	United States	United Kingdom	Netherlands Lands	Other European countries	Egypt b/	Straits Settlements c/	Philippines	China	Hong-Kong	Japan	Others	Total
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
1909	35	17	26	2	12	85	5	1	7	1	1	135
1910	63	41	29	5	18	152	15	1	1	1	1	332
1911	65	31	48	3	17	244	0	28	26	0	8	470
1912	84	111	51	1	33	294	0	30	7	0	8	619
1913	104	215	74	4	39	425	0	24	10	0	11	906
1914	35	147	125	5	37	672	0	11	9	0	14	1,055
1915	5	227	49	0	63	1,028	0	7	15	0	10	1,409
1916	54	139	54	1	57	1,408	0	9	5	2	16	1,745
1917	140	108	34	10	42	2,164	12	16	0	1	21	2,548
1918	133	171	77	1	54	2,647	17	96	6	6	18	3,406
1919	11	165	14	0	105	3,271	40	239	899	5	15	4,764
1920	49	459	82	3	206	3,543	0	706	1,162	0	27	6,237
1921	17	546	78	8	204	4,571	0	1,060	3,084	136	14	9,720
1922	43	540	74	30	150	4,030	0	1,051	3,258	0	14	9,190
1923	55	378	67	17	93	4,961	0	1,644	2,880	0	13	10,108
1924	25	293	48	8	99	4,840	0	2,660	1,962	0	7	9,942
1925	68	384	42	8	128	4,360	0	2,165	1,021	0	5	8,181
1926	86	1,127	73	13	426	2,747	2	1,824	774	0	5	7,077
1927	96	1,413	68	10	464	2,061	8	1,209	569	0	3	5,901
1928	63	769	24	6	154	1,870	5	394	149	0	4	3,438
1929	85	1,115	24	6	147	1,656	11	51	462	0	2	3,559
1930	152	1,021	36	9	131	1,258	11	70	401	0	2	3,091
1931	145	497	29	21	38	714	13	349	473	0	1	2,330
1932	78	454	25	9	53	181	10	23	136	0	2	971
1933	39	179	5	2	41	77	1	0	0	0	1	345
1934	43	245	3	2	38	92	1	2	0	0	0	425
1935	39	207	1	1	22	100	1	0	0	0	0	370
1936	34	206	1	1	17	150	1	0	0	0	1	410
1937	34	367	6	16	15	233	1	0	0	0	0	671
1938 f/	33	795	g/	18	13	254	g/	g/	g/	g/	4	1,117

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

a/ Net weight excluding all packing material. b/ Includes imports from Port Said when separately reported, and since 1935 imports from the Egyptian section of Sudan. c/ Includes British Malaya. d/ Less than 500 pounds. e/ Includes shipments, if any, from the Netherland territory of Riouw to Java and Madura. f/ Preliminary. g/ Nil, or not separately reported and included with others.

Table 4.- Netherlands Indies: Imports of cigars, by calendar years, 1909 to 1933 *g/*

Year	United States	United Kingdom	Other European countries	Egypt	Straits Settlements	Philippines	China	Hongkong	Japan	Others	Total
1909	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1910	1	1	1	441	4	0	55	20	8	16	549
1911	0	6	544	5	0	107	33	13	28	737	
1912	0	10	590	11	0	62	30	0	57	773	
1913	0	11	662	5	0	99	25	0	52	870	
1914	0	4	761	10	0	125	49	3	66	1,331	
1915	0	3	822	9	0	120	20	0	35	1,213	
1916	0	3	689	2	0	133	25	0	31	890	
1917	1	0	654	1	0	146	26	0	40	874	
1918	2	12	366	1	0	163	61	0	40	634	
1919	5	5	357	0	0	397	92	0	50	628	
1920	1	4	416	2	0	208	53	0	5	779	
1921	0	0	343	4	2	242	49	0	3	647	
1922	0	0	279	12	0	207	28	3	7	536	
1923	0	3	290	15	0	135	32	0	5	481	
1924	0	0	275	7	0	158	32	0	3	476	
1925	0	2	346	7	0	158	32	0	28	573	
1926	0	6	755	13	0	169	39	0	6	1,008	
1927	2	5	839	7	0	193	55	0	1,107	1,107	
1928	0	d/	343	5	0	145	24	0	16	534	
1929	0	d/	368	2	0	167	23	0	34	595	
1930	0	d/	345	1	d/	134	14	d/	9	503	
1931	0	d/	1	d/	d/	64	9	0	13	329	
1932	0	d/	1	d/	d/	40	6	0	19	214	
1933	0	d/	1	d/	d/	0	1	0	d/	70	
1934	0	d/	1	d/	d/	10	2	0	d/	78	
1935	0	d/	1	d/	d/	11	1	0	d/	75	
1936	0	d/	1	d/	d/	10	1	0	d/	87	
1937	d/	0	d/	1	d/	12	1	0	d/	125	
1938 <i>h/</i>	0	0	90	d/	0	34	1	0	0	0	
			0	112	0	14	0	0	0	226	

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

*a/* Net weight excluding all packing material. *b/* Includes imports from Port Said when separately reported, and since 1935 imports from the Egyptian section of Sudan. *c/* Includes British Malaya. *d/* Less than 500 pounds. *e/* Includes Hongkong which was not separately reported in 1922. *f/* Included with China. *g/* Preliminary. *h/* Preliminary.

Table 5.- Netherlands Indies: Imports of tobacco products other than cigars and cigarettes, by calendar years, 1909 to 1938 a/

Year	United States	United Kingdom	Other European countries	Egypt b/	Netherlands	Other	Philipines c/	Straits Settlements c/	China	Hongkong	Japan	Others	Total	
1909	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
1910	3	117	2,220	5	34	0	841	17	0	37	0	11	3,252	
1911	27	225	3,583	5	34	0	884	98	0	22	0	10	4,883	
1912	6	195	4,101	4	34	0	905	7	d/	10	0	23	5,281	
1913	23	294	4,439	4	39	0	739	0	e/	22	0	30	5,551	
1914	21	422	4,722	39	67	0	2,486	0	1,430	92	0	46	9,258	
1915	53	311	4,338	67	0	0	2,916	0	1,491	141	1	31	9,345	
1916	48	204	3,823	0	0	0	2,777	0	1,297	225	5	105	8,489	
1917	44	248	2,534	0	0	0	2,613	0	1,125	273	0	102	7,943	
1918	4	192	1,807	0	0	0	2,152	0	0	989	431	0	32	5,647
1919	11	68	369	0	0	0	2,044	33	0	786	547	13	32	3,896
1920	21	43	1,527	0	0	0	1,396	0	0	480	533	20	43	4,103
1921	26	80	2,778	0	0	0	1,491	0	0	571	499	0	67	5,507
1922	36	34	3,124	0	0	0	2,504	0	0	1,025	582	0	44	7,339
1923	36	192	2,992	19	0	0	2,485	0	0	939	526	0	66	7,255
1924	40	220	3,406	0	0	0	1,944	0	0	977	610	8	78	7,279
1925	42	183	3,525	0	0	0	1,858	0	0	919	523	0	37	7,085
1926	31	368	5,522	10	0	0	1,730	0	0	1,112	213	4	71	9,072
1927	35	362	7,124	0	0	0	1,685	0	0	1,671	77	0	44	10,994
1928	12	227	7,155	0	0	0	1,751	0	0	1,392	260	0	72	10,892
1929	13	214	6,054	3	0	0	1,828	0	0	899	292	0	33	9,235
1930	10	216	6,100	1	0	0	2,000	d/	0	980	182	0	55	9,548
1931	10	214	5,129	0	d/	0	1,665	0	0	1,035	143	0	37	8,233
1932	6	230	3,024	0	0	0	1,320	0	0	795	224	1	28	5,632
1933	4	219	1,614	0	d/	0	980	0	0	601	215	d/	15	3,650
1934	4	3,213	1,080	d/	d/	0	423	0	0	543	153	0	3	5,519
1935	13	5,794	1,102	0	0	0	315	0	0	560	120	d/	6	7,901
1936	19	4,292	1,292	d/	d/	0	330	0	0	485	106	d/	3	6,522
1937	20	2,751	1,697	0	0	0	325	0	0	408	89	0	5	5,294
1938	1/	4,121	3,262	0	0	0	295	0	0	327	100	0	8	8,133
1938.h/	1/	3,635	2,406	1/	1/	0	224	1/	0	182	125	i/	12	6,584

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

a/ Net weight excluding all packing material. b/ Includes imports from Port Said when separately reported and, since 1935, the Egyptian section of Sudan. c/ Includes British Malaya. d/ Less than 500 pounds. e/ Includes Hongkong, which was not separately reported in 1912. f/ Included with China. g/ Preliminary. h/ Reported with others if any.

APPENDIX II

Exports of Leaf Tobacco and Tobacco Products

by Destinations 1909 to 1938

Table 1.—Netherlands Indies: Combined exports of leaf tobacco and tobacco products, 1909 to 1938 a/

Year	United States	United Kingdom	Other European countries	Egypt	Straits Settlements	Philippines	China	Hongkong	Others	Total
	pounds	pounds	pounds	pounds	pounds	pounds	pounds	pounds	pounds	pounds
1909	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1910	d/	2	d/	118,040	e/	3	13,031	11	47	1: 131,133
1911	d/	d/	d/	124,271	e/	14,296	d/	27	24	3: 138,623
1912	d/	d/	d/	142,859	d/	20,415	d/	1	9	11: 163,295
1913	d/	d/	d/	166,318	d/	19,907	d/	d/	39	10: 186,274
1914	d/	d/	d/	187,627	d/	5,850	d/	d/	132:	12: 193,648
1915	d/	d/	d/	143,436	d/	4,521	d/	d/	42:	32: 148,203
1916	d/	d/	d/	181,343	d/	2,964	d/	d/	14:	40: 184,414
1917	d/	d/	d/	205,073	d/	3,006	d/	d/	d/	12: 208,092
1918	d/	1,168	0	19,506	d/	2,568	d/	d/	28:	5: 28,349
1919	d/	1,176	223,945	1,968	d/	5,405	d/	d/	14:	74: 424: 17,770
1920	d/	4,795	253,250	5,384	d/	8,004	d/	d/	116:	775: 301,711
1921	d/	454	d/	90,088	d/	5,000	d/	d/	3:	276,690
1922	d/	d/	d/	106,053	d/	5,156	d/	d/	28:	70: 102,019
1923	d/	d/	d/	114,564	d/	6,473	d/	d/	11:	21: 114,863
1924	d/	d/	d/	148,678	d/	314	d/	d/	151:	276: 117,412
1925	d/	d/	d/	176,293	d/	457	d/	d/	196:	387: 153,333
1926	d/	d/	d/	160,036	d/	22,643	d/	d/	191:	611: 204,154
1927	d/	d/	d/	15	168,661	218:	2,028	d/	12:	197: 164,396
1928	d/	d/	d/	147,146	d/	310:	d/	d/	2:	190: 171,480
1929	d/	d/	d/	6	145,281	6,702	d/	d/	14:	17: 155,685
1930	d/	d/	d/	151,595	15,120	15,120	d/	d/	9:	634: 162,780
1931	d/	e/	d/	153,480	16,154	16,154	d/	d/	29:	3,524: 173,119
1932	d/	d/	d/	151,709	22,768	22,768	d/	d/	11:	92: 54:
1933	d/	d/	d/	2	87,796	10,860	d/	d/	2:	98: 197: 179,779
1934	d/	d/	d/	14,655	14,655	14,655	d/	d/	54:	92: 54:
1935	d/	d/	d/	94,767	3,224	3,224	d/	d/	41:	88: 1,966: 164,282
1936	d/	d/	d/	96,768	11,152	11,152	d/	d/	74:	155: 711: 108,282
1937	d/	d/	d/	95,253	10,586	10,586	d/	d/	770:	155: 5,224: 108,282
1938	d/	d/	d/	101,437	4,963	4,963	d/	d/	37:	15: 31: 18: 98,691
	d/	d/	d/	97,590	7,681	7,681	d/	d/	39:	40: 493: 109,131
	d/	d/	d/				d/	d/	8:	40: 134: 178: 107,184
	d/	d/	d/				d/	d/	258:	120: 754: 108,198
	d/	d/	d/				d/	d/	22:	120: 2,397: 108,498
	d/	d/	d/				d/	d/	145:	145: 2,397: 108,498

Compiled from accompanying tables 2 to 5.

a/ Includes reexports of leaf tobacco throughout. For tobacco products reexports are included for the years 1909 to 1925, but are excluded from 1926 to 1938. Most of the leaf tobacco and all of the cut tobacco is reported in net weight, i.e., weight of all packing material excluded, except for the year 1926. Cigars and cigarettes are reported as net weight from 1909 to 1925 and as gross weight from 1926 to 1938. b/ Includes Port Said when separately reported. c/ Includes British Malaya. d/ Nil, or not separately reported and included with others. e/ Less than 500 pounds. f/ Preliminary.

Year	United States	Netherlands	Indies	United Kingdom	Other European countries	Egypt	Straits Settlements	Philippines	China	Hongkong	Others	Total
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
1909	0: 0:	118,040:	118,040:	0: 0:	12,959:	12,959:	11:	47:	1:	131,061		
1910	2:	124,269:	124,269:	d/ 0:	14,250:	14,250:	27:	20:	3:	138,571		
1911	0:	d/ 142,852:	142,852:	d/ 0:	20,397:	20,397:	0:	5:	10:	163,264		
1912	0:	166,308:	166,308:	0:	16,549:	16,549:	0:	39:	1:	182,897		
1913	0:	d/ 187,615:	187,615:	27:	2,756:	2,756:	0:	123:	7:	190,533		
1914	0:	d/ 143,424:	143,424:	44:	1,619:	1,619:	0:	42:	113:	24:	145,279	
1915	0:	d/ 161,290:	161,290:	0:	391:	391:	0:	14:	53:	d/ 181,748		
1916	0:	0:	204,429:	0:	0:	0:	0:	d/ 0:	d/ 0:	1:	204,465	
1917	3,962:	0:	19,466:	1,968:	0:	145:	0:	28:	5:	294:	25,868	
1918	5,301:	1,168:	0:	5,384:	0:	3,578:	0:	14:	74:	377:	15,896	
1919	5,596:	14,176:	223,841:	47,298:	1,744:	5,734:	0:	106:	638:	638:	299,133	
1920	842:	4,795:	252,243:	9,819:	5,000:	195:	0:	21:	196:	487:	274,393	
1921	454:	0:	89,985:	4,402:	5,156:	47:	0:	7:	196:	3:	100,250	
1922	d/	10:	106,026:	6,473:	d/ 197:	30:	151:	187:	2:	113,076		
1923	d/	25:	114,564:	314:	d/ 418:	0:	12:	174:	229:	229:	115,736	
1924	d/	0:	148,678:	457:	d/ 2,086:	2:	14:	175:	332:	332:	151,744	
1925	d/	0:	176,291:	22,643:	d/ 2,910:	9:	88:	101:	604:	604:	202,646	
1926	d/	0:	160,013:	218:	2,028:	207:	21:	0:	98:	44:	162,729	
1927	d/	15:	168,661:	393:	d/ 412:	22:	60:	5:	85:	85:	169,563	
1928	d/	0:	147,139:	6,700:	d/ 193:	7:	0:	d/ 0:	89:	d/ 89:	154,128	
1929	d/	6:	145,254:	15,120:	d/ 229:	28:	50:	d/ 0:	71:	581:	161,289	
1930	d/	0:	151,574:	16,149:	d/ 254:	0:	40:	40:	92:	3,463:	171,582	
1931	d/	0:	153,472:	22,768:	d/ 247:	0:	69:	68:	155:	1,950:	178,565	
1932	d/	3:	151,702:	10,858:	d/ 123:	0:	14:	155:	695:	695:	163,605	
1933	d/	2:	87,782:	14,653:	d/ 51:	0:	35:	14:	5,211:	5,211:	107,748	
1934	d/	0:	94,560:	3,222:	d/ 90:	0:	28:	30:	30:	30:	97,935	
1935	d/	0:	96,741:	11,151:	d/ 70:	0:	7:	39:	478:	478:	108,486	
1936	d/	0:	95,250:	10,586:	d/ 138:	0:	256:	133:	162:	162:	106,525	
1937	d/	0:	101,478:	4,963:	d/ 133:	0:	20:	119:	745:	745:	107,456	
1938	d/	d/	97,588:	7,681:	d/ e/	d/ e/	d/ e/	d/ 144:	2,369:	2,369:	107,782	

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

a/ Includes reexports, which are insignificant. Quantities are in net weight, i.e., weight of all packing material excluded, except for small portions of exports from 1926 to 1938, which are only reported in gross weight. b/ Includes exports to Port Said when separately reported. c/ Includes British Malaya. d/ Less than 500 pounds. e/ Not separately reported. Included with others, if any. f/ Gross weight, i.e., including weight of packing material. g/ Preliminary.

Table 3.- Netherlands Indies: Exports of cigarettes including strootjes, by calendar years, 1909 to 1938 a/

Year	United States	United Kingdom	Netherlands Lands	Other countries	European countries	Egypt	Settler-ments b/	Philip-ines c/	Straits-ment d/	Hong-kong	Others	Total
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
1909	0	0	0	0	0	0	0	0	72	0	0	72
1910	0	0	0	0	0	0	0	0	41	0	0	47
1911	0	0	0	0	0	0	0	0	17	0	0	26
1912	0	0	0	0	0	0	0	0	4	0	0	7
1913	0	0	0	0	0	0	0	0	2	0	0	9
1914	0	0	0	0	0	0	0	0	13	0	0	19
1915	0	0	0	0	0	0	0	0	5	0	0	9
1916	0	0	0	0	0	0	0	0	3	0	0	5
1917	e/	e/	e/	e/	e/	e/	e/	e/	2	0	0	5
1918	e/	e/	e/	e/	e/	e/	e/	e/	4	0	0	4
1919	e/	e/	e/	e/	e/	e/	e/	e/	18	0	0	23
1920	e/	e/	e/	e/	e/	e/	e/	e/	0	0	0	64
1921	e/	e/	e/	e/	e/	e/	e/	e/	0	0	0	19
1922	e/	e/	e/	e/	e/	e/	e/	e/	7	0	0	17
1923	e/	e/	e/	e/	e/	e/	e/	e/	9	0	0	3
1924	e/	e/	e/	e/	e/	e/	e/	e/	13	0	0	25
1925	e/	e/	e/	e/	e/	e/	e/	e/	5	0	0	19
1926	e/	e/	e/	e/	e/	e/	e/	e/	0	0	0	25
1927	e/	e/	e/	e/	e/	e/	e/	e/	0	0	0	14
1928	e/	e/	e/	e/	e/	e/	e/	e/	0	0	0	32
1929	e/	e/	e/	e/	e/	e/	e/	e/	0	0	0	519
1930	e/	e/	e/	e/	e/	e/	e/	e/	48	0	0	222
1931	e/	e/	e/	e/	e/	e/	e/	e/	507	0	0	52
1932	e/	e/	e/	e/	e/	e/	e/	e/	218	0	0	83
1933	e/	e/	e/	e/	e/	e/	e/	e/	40	0	0	27
1934	e/	e/	e/	e/	e/	e/	e/	e/	70	0	0	20
1935	e/	e/	e/	e/	e/	e/	e/	e/	22	0	0	13
1936	e/	e/	e/	e/	e/	e/	e/	e/	11	0	0	201
1937	e/	e/	e/	e/	e/	e/	e/	e/	5	0	0	30
1938	e/	e/	e/	e/	e/	e/	e/	e/	2	0	0	11

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

a/ Net weight 1909 to 1925, i.e., weight of packing material not included. Gross weight 1926 to 1938, i.e., weight of all packing material included. Includes reexports from 1926 to 1938. Strootjes are a native product made from cut tobacco rolled in corn husks. b/ Includes British Malaya. c/ Not separately reported. Included with others, if any. d/ Less than 500 pounds. e/ Preliminary. Includes cigars, which were not separately reported for 1917, 1918, 1923, 1924, and 1925.

Table 4.- Netherlands Indies: Exports of cigars, by calendar years, 1910 to 1933 1/

Year	United States	United Kingdom	Netherlands	Other European countries	Egypt b/	Straits Settlements c/	Philippines	China pines	Hong Kong	Others	Total
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
1909 d/	-	-	-	-	-	-	-	-	-	-	-
1910	-	-	-	-	-	-	-	-	-	-	-
1911	-	-	-	-	-	-	-	-	-	-	-
1912	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-
1917 d/	-	-	-	-	-	-	-	-	-	-	-
1918 d/	-	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-
1923 d/	-	-	-	-	-	-	-	-	-	-	-
1924 d/	-	-	-	-	-	-	-	-	-	-	-
1925 d/	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-
1930	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-
1938 f/	-	-	-	-	-	-	-	-	-	-	-

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

a/ Net weight 1909 to 1925, i.e., weight of packing material not included. Gross weight 1926 to 1938, i.e., weight of all packing material included. Includes reexports for years 1909 to 1925, but excludes reexports from 1926 to 1938. b/ Not separately reported. Included with others, if any. c/ Includes British Malaya. d/ Included with cigarettes. Cigars were not separately reported for years 1909, 1917, 1918, 1923, 1924, and 1925. e/ Less than 500 pounds. f/ Preliminary.

Table 5.- Netherlands Indies: Exports of cut tobacco, by calendar years, 1912 to 1938 <sup>2/</sup>

Year	United States	United Kingdom	Other European countries	Egypt	Straits Settlements	Philippines	China	Hong-kong	Others	Total
	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
1909 <sup>d/</sup>	-	-	-	-	-	-	-	-	-	-
1910 <sup>d/</sup>	-	-	-	-	-	-	-	-	-	-
1911 <sup>d/</sup>	-	-	-	-	-	-	-	-	-	-
1912	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1913	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1914	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1915	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1916	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1917	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1918	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1919	91:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1920	62:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1921	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1922	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1923	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1924	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1925	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1926 <sup>e/</sup>	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1927	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1928	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1929	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1930	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1931	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1932	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1933	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1934	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1935	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1936	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1937 <sup>e/</sup>	2:	0:	0:	0:	0:	0:	0:	0:	0:	0:
1938 <sup>e/</sup>	b/	0:	0:	b/	b/	b/	b/	b/	b/	b/

Compiled from data furnished by Central Bureau of Statistics of the Netherlands Indies.

a/ Net weight, i.e., excluding all packing material. Includes reexports for years 1912 to 1925, but excludes reexports for year 1926 to 1938. b/ Not separately reported. Included with others, if any. c/ Includes British Malaya. d/ Not reported, apparently included with leaf tobacco. e/ Gross weight, i.e., including weight of packing material. f/ Less than 500 pounds.

APPENDIX III

STAATSBLEAD OF THE NETHERLANDS INDIES

1935, No. 427

INDUSTRIES, LICENSES, PERMITS, CIGARETTE FACTORIES

Promulgation of the "Industrial Regulation Ordinance, Cigarette Factories 1935"

IN THE NAME OF THE QUEEN:

The Governor General of the Netherlands Indies,

Greeting all who may see this or hear it read,

proclaims:

That He, considering it necessary, for the execution of the "Industrial Regulation Ordinance 1934" (Staatsblad No. 595), to stipulate the following:

Having consulted the Council of the Netherlands Indies;

Has approved and decreed:-

Article 1.

In the application of this Government ordinance, the following definitions should apply:

- a. Cigarette: Any tobacco product manufactured in the Netherlands Indies of which the outside cover is paper and which is manufactured entirely by machinery.
- b. Cigarette factory: A factory where cigarettes are produced.
- c. Cigarette tax value: The retail price shown on the internal revenue stamp affixed to the cigarette container on the basis of the Tobacco Excise Ordinance 1932 (Staatsblad No. 517).
- d. Consumption: The consumption of cigarettes in the Netherlands Indies during a certain period fixed by the Director and expressing the total cigarette tax value.

Article 2.

The "Industrial Regulation Ordinance 1934" shall apply to the cigarette factories in all of the Netherlands Indies.

Article 3.

(1) The forms of the application for obtaining licenses and permits shall be prescribed by the Director.

(2) The application must be accompanied, insofar as possible and to the satisfaction of the Director, by the necessary documentary evidence and signed statements to prove the validity of the application and the correctness of the particulars contained therein.

(3) The application, together with the documentary evidence and statements mentioned in the preceding paragraph, shall be submitted, in Java and Madura, to the Assistant Resident; and, in the Outer Possessions, to the Head of the Local government in the territory where the cigarette factory is or may be established.

(4) The authorities mentioned in the preceding paragraph shall forward the application and the accompanying documents, provided that all the requirements have been submitted within the period of time fixed by Article 5, paragraph 3, of the "Industrial Regulation Ordinance 1934," to the Director together with their recommendations thereon. Insofar as the Government territories of Java and Madura are concerned, the said applications, documents and recommendations shall be forwarded to the Director after consultation with the respective Regents.

(5) The forwarding of the documents mentioned in the preceding paragraph shall be done in the Government districts of Java and Madura through the intermediary of the Resident; in the Vorstenlanden, through the Governor; and, in the Outer Possessions, through the district chiefs and Heads of the regional governments.

Article 4.

(1) Request for permission to transfer licenses and permits shall be submitted in writing by the holders thereof to the Director through the intermediary of the authorities mentioned in Article 3, paragraph, above. Such requests must be accompanied by the necessary documentary evidence in support of the requests.

(2) The forwarding of such request shall be done in the same way as is prescribed in Article 3, paragraphs 4 and 5, in the case of licenses and permits.

Article 5.

Licenses and permits, the forms of which shall be fixed by the Director, shall contain the following information.

- a. The size of the industry, expressed in the percentage of the total production (equal to the total consumption). In connection therewith, the maximum to be fixed by the Director, or the maximum tax value of the product, shall be taken into consideration. Production for exportation, however, shall be free.

- b. The working methods and the nature of the enterprise concerned.
- c. The conditions under which the factory, if closed, was put out of operation.

#### Article 6.

(1) The licenses, permits and approvals mentioned in Articles 3, 4, and 7 of the "Industrial Regulation Ordinance 1934," the adverse decisions on inquiries and requests, and decisions on the cancelation of licenses and permits shall be forwarded by the Director to the interested parties through the intermediary of the authorities mentioned above in Article 2, paragraphs 3 and 5.

(2) It shall be ascertained periodically, as far as possible, in a way to be prescribed by the Director, whether the particulars mentioned in the licenses and permits agree with the actual conditions in the cigarette factories.

#### Article 7.

(1) The closing of cigarette factories, on the basis of Article 10 of the "Industrial Regulation Ordinance 1934" shall be ordered by decree of the Director who shall give his reasons therefor. The said decree shall show the manner in which the factory shall be closed.

(2) The authorities mentioned above in Article 3, paragraph 3, shall apply the decrees mentioned in the preceding paragraphs.

#### Article 8.

(1) The president and members of the committee of experts, provided for in Article 17 of the "Industrial Regulation Ordinance 1934", shall be appointed and discharged by the Director; provided, however, that in any case the following shall have seats in the committee:

1st. At least three experts in the cigarette industry.

2d. At least one expert in tobacco growing.

3d. At least one expert in the tobacco trade.

(2) The advice of the committee shall be obtained in writing by or on behalf of the Director with regard to any application for a permit and in any other case where the Director may consider such advice necessary.

(3) The Director may fix a period of time within which the requested advice shall be submitted to him.

#### Article 9.

(1) In order to defray the expenses incurred in the application of these regulations, an annual fee of Florin 0.30 for each thousand guilders or part thereof of the cigarette tax value of the total production, on the basis of the license and permits, shall be paid in the case of each license or permit issued.

(2) Should a permit for the extension of a factory or for the introduction of a new method of working be granted, the annual fee shall be fixed after due consideration of the provisions of the preceding paragraph.

(3) The dates and method of paying the annual fee, due in accordance with the preceding paragraph shall be prescribed by the Director.

(4) The prompt payment of these fees is included in the conditions mentioned in Article 9 a of the "Industrial Regulation Ordinance 1934."

Article 10.

(1) This government ordinance may be referred to as the "Industrial Regulation Cigarette Factories 1935."

(2) These regulations shall take effect on September 1, 1935.

In order that no one may plead ignorance of these regulations, they shall be published in the Staatsblad of the Netherlands Indies.

Done at Batavia, August 22, 1935.

Published on August 30, 1935  
The Secretary General

P. J. GERKE

DE JONGE.

THE SECRETARY GENERAL  
P. J. GERKE.

(Decree of the Governor General  
of August 22, 1935, No. 34).

Translated from the original, Office of American Trade Commissioner, Batavia, Java.



